

# Recent records of pteridophytes for Belize, Central America

XX (330171.1)

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**SYNOPSIS.** Belize has one of the richest pteridophyte floras in the world, expressed on an area basis. Analysis of recent collections and the widely scattered literature for the country reveals that the number of species has risen by approximately 20% since the publication of the major regional flora, *Flora Mesoamericana*, in 1995. Investigation of the dates of discovery for each taxon produces a graph that indicates many more taxa are yet to be discovered in the country. A preliminary assessment is made of areas in Belize likely to reveal new records.

## INTRODUCTION

The vascular plants of Belize have never been treated adequately in a national flora. Early botanical investigation during the nineteenth century was focussed very much on economically important species, especially timber, latex and fruit, though the list produced for the now defunct Botanic Station by Campbell (1899) included a number of native ferns and orchids. Other early accounts of the flora (Blake, 1917; Record, 1925), based on exploration and forestry, excluded pteridophytes. Standley & Record (1936) provided a good floristic grounding for the country with the *Forests and flora of British Honduras*, though this lacks some of the elements of a regular flora

and the content is biased strongly towards trees both in species coverage and detail. Herbaceous angiosperms and pteridophytes are merely listed, except where they are believed to be new species. However, this single publication provided the earliest published record for almost 25% of species in the entire flora, far exceeding the significance of any other publication for Belize in this respect. A number of checklists have appeared subsequently for the country. Those by Dwyer and others (Spellman et al., 1975; Dwyer & Spellman, 1981) excluded pteridophytes, but some records appear in the catalogue by Schipp (1934). The catalogue of the Belize National Herbarium (BRH) by Vargas & Shawe (1997) includes a number of plant records for the country not published elsewhere.

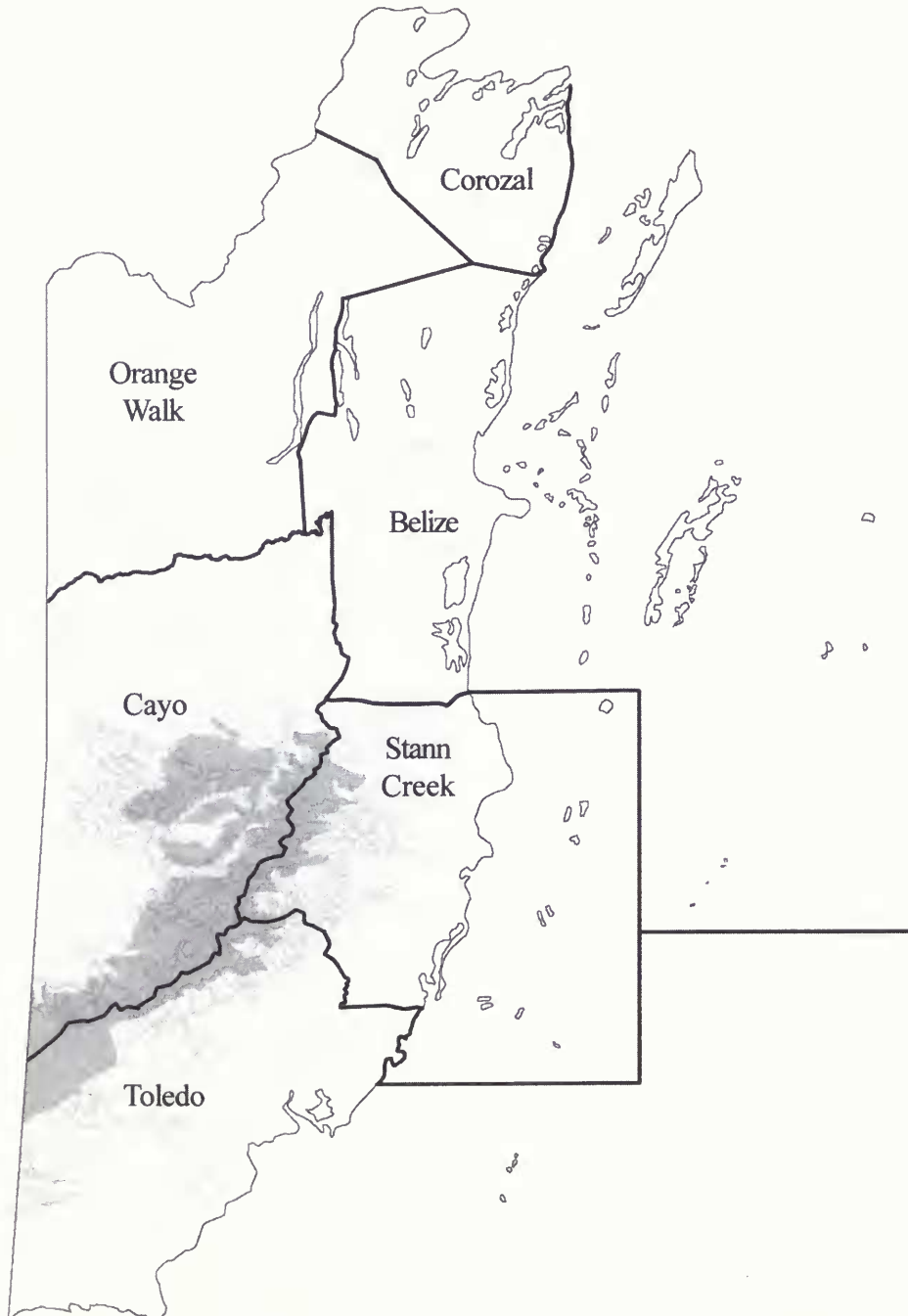


Fig. 1 Districts of Belize. Shaded areas represent 300 m and 600 m contours.

Recent expedition reports and surveys (for example Parker et al., 1993) include many of the new records of pteridophytes for the country.

The regional Flora of Guatemala expressly included Belize (as British Honduras) in its remit (for example, Standley & Steyermark 1958) though for the majority of pteridophyte taxa listed (Mickel, 1981; Smith, 1981*b*; Stolze, 1976, 1981, 1983; Stolze & Hickey, 1983; Øllgaard, 1983) there is no explicit mention of the presence in or absence from Belize. For most vascular plants, this publication still provides the most complete coverage of the flora for Belize to date, though for pteridophytes it has been superseded by the regional *Flora Mesoamericana* (Davidse et al., 1994, 1995). This latter project will provide a comprehensive coverage of the species of Belize on its eventual completion and it has a unique strength in the development of a live link to the TROPICOS (Solomon et al., 2000) database in 1998, so that the Internet version of the flora is updated on a continual basis.

Since the publication of the volume of *Flora Mesoamericana*, there has been considerable interest in the pteridophytes of Belize arising out of a number of projects (for example, Hughes, 1998) and recent fieldwork. A list of current names used for Belize, with an indication of their status is given below. The report includes an analysis of over 2500 pteridophyte specimen records from The Natural History Museum in London (BM) and other herbaria at AAU, B, BR, BRH, CR, DS, F, G, GH, K, LAGU, MEXU, MICH, MO, NY, S, SEL, TEX, UAMIZ, UC, UCWI, US and Z. Full use has been made of information sources on the Internet, and the authors particularly express their gratitude to Missouri Botanical Garden for making TROPICOS available on the World Wide Web.

## LIST OF TAXA

The following list is arranged alphabetically by family following the family delimitation used in *Flora Mesoamericana* (Davidse et al., 1995). Taxa previously recorded in *Flora Mesoamericana* are shown in italic and the superscript reference indicates the account and page number. Representative material is shown with one voucher for each district (Fig. 1) where the species has been recorded, except where the taxon has particular significance as a new record or endemic. Preference in citation is given to specimens cited in a monograph, revision or a recent regional flora. A superscript reference number or numbers following a specimen is to the source included in the bibliography where that specimen is listed. For new records not included in *Flora Mesoamericana*, the name is shown in bold and additional specimens are listed where known. An indication is given of where the taxon was first listed for Belize.

### ASPLENIACEAE

- Asplenium abscissum* Willd., *Sp. pl.* 5: 321 (1810)<sup>2:295</sup>  
Toledo, G. Davidse & D.L. Holland 36836 (MO<sup>115</sup>).
- Asplenium auritum* Sw. in *J. Bot. (Schrader)* 1800(2): 52 (1801)<sup>2:297</sup>  
Cayo, A. Hughes 64 (BM-000557717<sup>122</sup>); Toledo, T.B. Croat 24260 (MO<sup>2</sup>).
- Asplenium cirrhatum* Rich. ex Willd., *Sp. pl.* 5: 321 (1810)<sup>2:299</sup>  
Toledo, B.H. Allen 15443 (MO<sup>2,3,115</sup>).
- Asplenium cristatum* Lam., *Encycl.* 2(1): 310 (1786)<sup>2:300</sup>  
Cayo, A. Hughes 98 (BM-000557710<sup>122</sup>); Stann Creek, W.A. Schipp 50 (BM<sup>2</sup>, BRH<sup>125</sup>, NY); Toledo, B.K. Holst 4397 (MO<sup>91</sup>).
- Asplenium delitescens* (Maxon) L.D. Gómez in *Brenesia* 8: 52 (1976)<sup>2:301</sup>  
Cayo, A. Hughes 12 (BM-000531878!, BM-000557708<sup>122</sup>,

- BRH!); Stann Creek, P.H. Gentle 2714 (F, GH, K<sup>2</sup>, MICH, NY); Toledo, P.H. Gentle 6261 (F, G, NY, S, UC).
- Asplenium dentatum* L., *Sp. pl.* 2: 1080–1081 (1753)  
Stann Creek, P.H. Gentle 2712 (NY); Toledo, T.E. Hawkins 1631 (MO<sup>115</sup>).
- A new name for *Asplenium trichomanes-dentatum* L., listed for Belize in *Flora Mesoamericana* (Adams, 1995*b*: 322) based on extralimital distribution in Proctor (1985: 375) but without reference to a specimen. The name is automatically corrected according to the International Code of Botanical Nomenclature (Tokyo Code 23.8, ex. 14, Greuter et al., 1998). Vargas & Shawe (1997: 22) listed a specimen (W.A. Schipp 1066, BRH) under the name *A. dentatum* L., but this material has also been identified as *A. macilentum* by Adams (1995*b*: 309) based on a duplicate at K.
- Asplenium formosum* Willd., *Sp. pl.* 5: 329 (1810)<sup>2:304</sup>  
Cayo, G.R. Proctor 29902 (BM<sup>2</sup>); Stann Creek, R. Rivero et al. 2576 (BRH<sup>125</sup>); Toledo, G. Davidse 35782 (MO<sup>115</sup>).
- Asplenium heterochroum* Kunze in *Linnaea* 9: 67 (1834)<sup>2:306</sup>  
Cayo, A. Hughes 148 (BM-000557731<sup>122</sup>); Stann Creek, W.A. Schipp 211 (BM<sup>2</sup>, BRH<sup>125</sup>); Toledo, G. Davidse & A.E. Brant 32131 (MO<sup>115</sup>).
- Asplenium juglandifolium* Lam., *Encycl.* 2(1): 307 (1786)<sup>2:308</sup>  
Toledo, B.K. Holst 4027 (MO<sup>91,115</sup>).
- Asplenium laetum* Sw., *Syn. fil.*: 79, 271 (1806)<sup>2:308</sup>  
Stann Creek, W.A. Schipp S-277 (B<sup>115</sup>); Toledo, P.H. Gentle 7378 (BM<sup>2,115</sup>, F<sup>115</sup>, G<sup>115</sup>, MICH<sup>115</sup>, NY<sup>115</sup>, S<sup>115</sup>, UC<sup>115</sup>).
- Asplenium macilentum* Kunze ex Klotzsch in *Linnaea* 20: 351 (1847)<sup>2:309</sup>  
Toledo, W.A. Schipp 1066 (BRH<sup>125</sup>, K<sup>2</sup>, NY).  
Adams (1995: 309–310) considered that material cited as *A. monodon* Liebm. was more closely related to *A. macilentum* than *A. auritum*, although it was included as a synonym in the latter taxon by Stolze (1981: 60). It is not clear if *A. monodon* occurs in Central America and the name may have been misapplied.
- Asplenium palmeri* Maxon in *Contr. U.S. Natl. Herb.* 13: 39 (1909)<sup>2:313</sup>  
First recorded for Belize in extralimital distribution for the Pteridophyte flora of Oaxaca, Mexico (Mickel & Beitel, 1988: 65) but without explicit reference to specimens. Vargas & Shawe (1997: 22) list a specimen collected in 1929 from the Stann Creek District (W.A. Schipp 211, BRH) under this name, but a duplicate at BM has been identified as *A. heterochroum* by Adams (1995*b*: 306). Material needs to be located to support the record for Belize.
- Asplenium pteropus* Kaulf., *Enum. filic.*: 170 (1824)<sup>2:314</sup>  
Stann Creek, W.A. Schipp 365 (MO<sup>2</sup>, NY); Toledo, B.K. Holst et al. 5195 (MO<sup>115</sup>).
- Asplenium punilum* Sw., *Prodr.*: 129 (1788)<sup>2:315</sup>  
Cayo, A. Hughes 136 (BM!); Toledo, T. Arnason & J. Lambert 17182 (MO<sup>2</sup>), G. Davidse & B.K. Holst 36181 (MO<sup>115</sup>).
- Asplenium riparium* Liebm. in *Kongel. Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd. ser. 5, I*: 244 (1849)  
Toledo, G. Davidse & D.L. Holland 36837 (MO<sup>115</sup>), B.K. Holst 5332 (MO<sup>115</sup>).
- Not previously recorded from Belize in the Central American literature, but material collected from Toledo District in 1996 and 1997 is listed in TROPICOS and identified as this taxon by A.R. Smith in 1997.
- Asplenium salicifolium* L., *Sp. pl.* 2: 1080 (1753)<sup>2:318</sup>  
*Asplenium salicifolium* var. *salicifolium*<sup>2:319</sup>  
Cayo, T.B. Croat 23773 (MO<sup>2</sup>).
- Asplenium serra* Langsd. & Fisch., *Pl. Voy. Russes monde* 1: 16, t. 19 (1810)<sup>2:319</sup>

- Cayo, *B.H. Allen* 15177 (BM-000543291!, MO<sup>2,3,115</sup>).  
*Asplenium serratum* L., *Sp. pl.* 2: 1079 (1753)<sup>2:319</sup>  
 Cayo, *C.L. Lundell* 6235 (MICH<sup>28</sup>, NY); Stann Creek, *R. Rivero*  
 et al. 2602 (BRH<sup>125</sup>); Toledo, *C. Whitefoord* 1625 (BM-  
 000543328!<sup>2</sup>).  
*Asplenium uniseriale* Raddi in *Opusc. Sci.* 3: 291 (1819)  
 Toledo, *B.K. Holst* 5321 (MO<sup>115</sup>, UC<sup>115</sup>).  
 Not listed for Belize in the published version of *Flora*  
*Mesoamericana* (Adams, 1995b: 323), but included in the Internet  
 version based on a specimen collected in 1996 from Toledo  
 District.

## BLECHNACEAE

- Blechnum* × *antillanum* Proctor in *Brit. Fern Gaz.* 9: 214 (1965)  
 Cayo, *G.R. Proctor* 29904 (BRH<sup>125</sup>).  
 Interpreted in *Flora Mesoamericana* (Moran, 1995ae: 329) as a  
 hybrid between *B. meridense* and *B. glandulosum* and expected  
 from Mesoamerica. Vargas & Shawe (1997: 31) listed an unpub-  
 lished herbarium name with the epithet 'antillense' attributed to  
 G.R. Proctor and based on a specimen (cited above, collected in  
 1968 from Rio Frio Caves in Cayo District) which apparently  
 equates to Proctor's *Blechnum* × *antillanum*. However, of the  
 putative parent species, only *B. meridense* has been recorded  
 from Belize and the status of this specimen is uncertain.  
*Blechnum* × *caudatum* Cav., *Descr. pl.*: 262 (1802)<sup>67:326</sup>  
 Cayo, *A. Hughes* 34 (BM-000531849!).  
*Blechnum ensiforme* (Liebm.) C. Chr., *Index filic.*: 153 (1905)  
 Toledo, *G. Davidse & D.L. Holland* 36781 (MO<sup>115</sup>, UC<sup>115</sup>).  
 Not recorded from Belize in the published version of *Flora*  
*Mesoamericana* (Moran, 1995ae: 327), but included in the  
 Internet version based on a specimen (*G. Davidse & D.L. Hol-*  
*land* 36781, UC) collected from Toledo District in 1997 and  
 identified by A.R. Smith in the same year.  
*Blechnum fragile* (Liebm.) C.V. Morton & Lellinger in *Amer. Fern*  
*J.* 57: 68 (1967)<sup>67:328</sup>  
 Cayo, *B.H. Allen* 15204 (MO<sup>3,67,115</sup>); Toledo, *B.K. Holst* et al.  
 5303 (MO<sup>115</sup>).  
*Blechnum gracile* Kaulf., *Enum. filic.*: 158 (1824)<sup>67:328</sup>  
 Toledo, *G. Davidse & A.E. Brant* 31915 (MO<sup>67,115</sup>).  
*Blechnum meridense* Klotzsch in *Linnaea* 20: 349 (1847)  
 Toledo, *G. Davidse* 36979 (MO<sup>115</sup>, UC), *D.L. Holland* 65 (MO<sup>115</sup>),  
*D.L. Holland & B. Kid* 100 (MO<sup>115</sup>).  
 Not recorded from Belize in the published version of *Flora*  
*Mesoamericana* (Moran, 1995ae: 329), but included in the  
 Internet version based on a specimen (*G. Davidse* 36979, UC)  
 collected from Toledo District in 1997 and identified by A.R.  
 Smith in the same year.  
*Blechnum occidentale* L., *Sp. pl.* 2: 1077 (1753)<sup>67:329</sup>  
 Cayo, *A. Hughes* 93 (BM-000531830!, BM-000531837!); Stann  
 Creek, *W.A. Schipp* 162 (BRH<sup>125</sup>, NY); Toledo, *G. Davidse &*  
*A.E. Brant* 32304 (MO<sup>67,115</sup>).  
*Blechnum polypodioides* Raddi in *Opusc. Sci.* 3: 294 (1819)<sup>67:329</sup>  
 Cayo, *H.H. Bartlett* 11643 (US).  
 Moran (1995af: 329) did not base his record for this taxon on a  
 specimen, but on extralimital distribution in *Flora of Chiapas*  
 (Smith, 1981a: 60). The Bartlett specimen cited above is at US,  
 and a duplicate is to be expected at MICH.  
*Blechnum serrulatum* Rich. in *Actes Soc. Hist. Nat. Paris* 1: 114  
 (1792)<sup>67:330</sup>  
 Belize, *G. Davidse & A.E. Brant* 32999 (MO<sup>67,115</sup>); Orange Walk,  
*G.R. Proctor* 35794 (BRH<sup>125</sup>); Stann Creek, *P.H. Gentile* 8227  
 (NY); Toledo, *G. Davidse & A.E. Brant* 32496 (MO<sup>115</sup>).

- Salpichlaena volubilis* (Kaulf.) J. Sm. in Hook. & Bauer, *Gen. fil.*: t.  
 93 (1841)<sup>68:332</sup>  
 Toledo, *B.K. Holst* 4287 (MO<sup>68,91,115</sup>).

## CYATHEACEAE

- Alsophila firma* (Baker) D.S. Conant in *J. Arnold Arbor.* 64: 372  
 (1983)<sup>101:89</sup>  
 Cayo, *B.H. Allen* 15221 (MO<sup>3,101,115</sup>); Stann Creek, *A.H. Gentry*  
 7958 (MO<sup>115</sup>); Toledo, *B.K. Holst* et al. 5301 (MO<sup>115</sup>).  
*Alsophila salvinii* Hook. in Hook. & Baker, *Syn. fil.*: 36 (1866)  
 Toledo, *B.K. Holst* 5854 (MO<sup>115</sup>).  
 This Central American endemic was not recorded for Belize in  
*Flora Mesoamericana* (Riba, 1995c: 90), though it has been  
 recorded from all surrounding countries and is included here  
 based on a specimen collected in 1997 from Toledo District.  
 Further material is to be expected from the wetter parts of the  
 Maya Mountain divide and the *Liquidambar* forests.  
*Cyathea costaricensis* (Mett. ex Kuhn) Domin in *Acta Bot. Bohem.*  
 9: 107 (1930)<sup>40:96</sup>  
 Stann Creek, *J.D. Dwyer* et al. 583 (MO<sup>40,115</sup>).  
*Cyathea divergens* Kunze in *Linnaea* 9: 100 (1834)<sup>40:97</sup>  
*Cyathea divergens* var. *tuerckheimii* (Maxon) R.M. Tryon in *Contr.*  
*Gray Herb.* 206: 56 (1976)<sup>40:97</sup>  
 Cayo, *B.H. Allen* 15224 (MO<sup>3,40,115</sup>); Toledo, *B.K. Holst* et al.  
 5245 (MO<sup>115</sup>).  
*Cyathea microdonta* (Desv.) Domin in *Pteridophyta*: 263 (1929)<sup>40:98</sup>  
 Stann Creek, *J.D. Dwyer* et al. 549 (MO<sup>40,115</sup>); Toledo, *P.H.*  
*Gentile* 1933 (NY).  
*Cyathea multiflora* Sm. in *Mém. Acad. Roy. Sci. (Turin)* 5(1790–  
 1791): 416 (1793)<sup>40:99</sup>  
 Cayo, *J. Meave* 1037 (MO<sup>40,115</sup>); Toledo, *M.J. Balick* et al. 2543  
 (BRH<sup>125</sup>, MO<sup>115</sup>, NY).  
*Cyathea myosuroides* (Liebm.) Domin in *Pteridophyta*: 263 (1929)<sup>40:99</sup>  
 Cayo, *A. Hughes* 132a (BM-000531752!, BM-000531908!, BM-  
 000531909!); Stann Creek, *W.A. Schipp* 191 (BRH<sup>125</sup>, NY);  
 Toledo, *B.K. Holst* 4285 (MO<sup>91,115</sup>).  
*Cyathea schiedeana* (C. Presl) Domin in *Pteridophyta*: 263 (1929)<sup>40:101</sup>  
 Cayo, *J.D. Dwyer* 11431 (MO<sup>40,115</sup>); Stann Creek, *P.H. Gentile*  
 8257 (NY); Toledo, *B.H. Allen* 15430 (MO<sup>3,115</sup>).  
*Cyathea ursina* (Maxon) Lellinger in *Amer. Fern J.* 77: 101 (1987)<sup>40:102</sup>  
 Stann Creek, *P.H. Gentile* 3197 (LL<sup>40</sup>, MICH<sup>23</sup>, MO-photograph<sup>40,</sup>  
<sup>115</sup>, US-holotype<sup>23,30,120,124</sup>).  
 Reported only from the type collected from Antelope Ridge in  
 the Stann Creek Valley of Belize, this Central American endemic  
 occurs also in Guatemala and from Nicaragua to Panama.  
*Sphaeropteris horrida* (Liebm.) R.M. Tryon in *Contr. Gray Herb.*  
 200: 20 (1970)<sup>89:104</sup>  
 Toledo, *B.K. Holst* 4213 (MO<sup>89,91,115</sup>).

## DAVALLIACEAE

- Nephrolepis biserrata* (Sw.) Schott, *Gen. fil.*: t. 3 (1834)<sup>80:286</sup>  
 Cayo, *A. Hughes* 130 (BM-000531755!<sup>22</sup>, BM-000531910!);  
 Stann Creek, *W.A. Schipp* 394 (BRH<sup>125</sup>, NY<sup>80</sup>); Toledo, *G. Davidse*  
 & *A.E. Brant* 32193 (MO<sup>115</sup>).  
*Nephrolepis cordifolia* (L.) C. Presl, *Tent. pterid.*: 79 (1836)<sup>80:287</sup>  
 Cayo, *G.R. Proctor* 29881 (BRH<sup>125</sup>); Toledo, *D.E. Breedlove &*  
*D.C. McClintock* 23670 (DS<sup>80</sup>).  
*Nephrolepis multiflora* (Roxb.) F.M. Jarrett ex C.V. Morton in  
*Contr. U.S. Natl. Herb.* 38: 309 (1974)<sup>80:287</sup>  
 Cayo, *A. Hughes* 67 (BM-000531799!, BM-000557718!<sup>22</sup>); Stann

- Creek, *R. Rivero* et al. 2536 (BRH<sup>125</sup>); Toledo, *B.K. Holst* 4507 (MO<sup>80, 91, 115</sup>).
- Nephrolepis pendula* (Raddi) J. Sm. in *J. Bot. (Hooker)* **4**: 197 (1841)<sup>80: 288</sup>
- Cayo, *C.L. Lundell* 6305 (MICH<sup>28</sup>, NY<sup>80</sup>); Toledo, *M.E. Peck* 538 (NY).
- Nephrolepis rivularis* (Vahl) Mett. ex Krug in *Bot. Jahrb. Syst.* **24**: 122 (1897)
- Toledo, *G. Davidse* 36876 (MO<sup>115</sup>, UC), *T.E. Hawkins* 1425 (MO<sup>115</sup>).
- Not recorded for Belize in the published version of *Flora Mesoamericana* (Nauman, 1995: 288), although included in the Internet version on the basis of material collected in 1997 from Toledo District and identified by A.R. Smith in 1997 and 1998.
- Nephrolepis undulata* (Afzel. ex Sw.) J. Sm. in *Bot. Mag.* **72**(Companion): 35 bis (1846)
- Cayo, *A. Hughes* 104 (BM-000532008!).
- Not recorded for Belize in *Flora Mesoamericana* (Nauman, 1995: 288), although recorded from all surrounding countries and to be expected in Belize. The material listed here from Cayo District is not fully fertile and confirmation of the identification is required from further collections.
- Oleandra articulata* (Sw.) C. Presl, *Tent. pterid.*: 78, t. 2, f. 12 (1836)<sup>90: 289</sup>
- Toledo, *T.E. Hawkins* 1542 (MO<sup>115</sup>).

## DENNSTAEDTIACEAE

- Dennstaedtia bipinnata* (Cav.) Maxon in *Proc. Biol. Soc. Wash.* **51**: 39 (1938)<sup>47: 152</sup>
- Toledo, *B.K. Holst* 4474 (MO<sup>47, 91, 115</sup>).
- Dennstaedtia cicutaria* (Sw.) T. Moore, *Index fil.*: xcvi (1857)<sup>47: 152</sup>
- Toledo, *W.A. Schipp* S-802 (GH<sup>47, 115</sup>).
- Dennstaedtia dissecta* (Sw.) T. Moore, *Index fil.*: 305 (1861)<sup>47: 152</sup>
- Stann Creek, *R. Rivero* et al. 2587A (BRH<sup>125</sup>); Toledo, *W.A. Schipp* S-921 (GH<sup>47, 115</sup>).
- Hypolepis repens* (L.) C. Presl, *Tent. pterid.*: 162 (1836)<sup>48: 156</sup>
- Stann Creek, *R. Rivero* et al. 2532 (BRH<sup>125</sup>); Toledo, *W.A. Schipp* 258 (GH<sup>48, 115</sup>, NY).
- Lindsaea klotzschiana* Moritz in Ettingsh., *Farnkr. Jertz.*: 212, t. 145, f. 1–2 (1865)<sup>49: 158</sup>
- Toledo, *B.K. Holst* 4265 (MO<sup>49, 91, 115</sup>).
- Lindsaea lancea* (L.) Bedd., *Suppl. ferns S. Ind.*: 6 (1876)<sup>49: 158</sup>
- Lindsaea lancea* var. *lancea*<sup>49: 159</sup>
- Stann Creek, *W.A. Schipp* 100 (BRH<sup>125</sup>, NY); Toledo, *C. Whitefoord* 1310 (BM, MO<sup>49, 115</sup>).
- Lindsaea quadrangularis* Raddi in *Opusc. Sci.* **3**: 294 (1819)<sup>49: 159</sup>
- Lindsaea quadrangularis* subsp. *subalata* K.U. Kramer in *Acta Bot. Neerl.* **6**: 190 (1957)<sup>49: 159</sup>
- Stann Creek, *W.A. Schipp* 200 (BRH<sup>125</sup>, F<sup>49, 115</sup>, US); Toledo, *G. Davidse* 36247 (MO<sup>115</sup>).
- Lindsaea stricta* (Sw.) Dryand. in *Trans. Linn. Soc. London* **3**: 42 (1797)<sup>49: 159</sup>
- Lindsaea stricta* var. *stricta*<sup>49: 159</sup>
- Belize, *P.H. Gentle* 1536 (K, NY); Cayo, *G. Davidse* & *A.E. Brant* 33024 (MO<sup>49, 115</sup>); Toledo, *G. Davidse* & *A.E. Brant* 31958 (MO<sup>115</sup>).
- Lonchitis hirsuta* L., *Sp. pl.* **2**: 1078 (1753)
- Toledo, *G. Davidse* & *D.L. Holland* 36478 (MO<sup>115</sup>), *G. Davidse* 36888 (MO<sup>115</sup>), *G. Davidse* 36983 (MO<sup>115</sup>, UC), *B.K. Holst* et al. 5516 (MO<sup>115</sup>).
- Not listed for Belize in the published version of *Flora Mesoamericana* (Moran (1995n: 160), but included in the Internet

- version on the basis of a collection from Toledo District (*G. Davidse* 36983, UC) in 1997 and identified by A.R. Smith in December 1997. This is the first record of the genus for Belize.
- Odontosoria schlechtendalii* (C. Presl) C. Chr., *Index filic.*: 209 (1905)<sup>51: 161</sup>
- Toledo, *G. Davidse* & *A.E. Brant* 31986 (MO<sup>51, 115</sup>, US).
- Pteridium caudatum* (L.) Maxon, in *Proc. U.S. Natl. Mus.* **23**(1226): 631 (1901)<sup>52: 162</sup>
- Belize, *C. Whitefoord* 2452 (BM); Cayo, *A. Hughes* 65 (BM-000531794!, BM-000557716!); Stann Creek, *W.A. Schipp* 190 (BRH<sup>125</sup>, NY); Toledo, *C. Whitefoord* 2204 (MO<sup>52, 115</sup>).
- Saccoloma elegans* Kaulf. in *Berlin. Jahrb. Pharm. Verbundenen Wiss.* **21**: 51 (1827)<sup>53: 163</sup>
- Saccoloma elegans* subsp. *chartaceum* G.B. Nair ex Cremers & K.U. Kramer, *Bot. Helvet.* **99**: 47 (1989)<sup>53: 163</sup>
- Cayo, *T.B. Croat* 24577 (MO<sup>53, 115</sup>); Stann Creek, *W.A. Schipp* 90 (BRH<sup>125</sup>, NY); Toledo, *P.H. Gentle* 9315 (NY).
- Saccoloma inaequale* (Kunze) Mett. in *Ann. Sci. Nat., Bot. sér. 4*, **15**: 80 (1861)<sup>53: 163</sup>
- Toledo, *W.A. Schipp* 315 (MO<sup>53, 115</sup>, US).

## DICKSONIACEAE

- Cibotium regale* Verschaff. & Lem. in *Ill. Hort.* **15**: t. 548 (1868)
- Cayo, *A.K. Monro* & *S. Cafferty* 2639 (BM-000543340!, BM-000543341!, BM-000543342!, BM-000543343!, BRH, LAGU, MEXU, MO).
- Known formerly from Chiapas (including the type), Guatemala and Honduras to El Salvador (Pérez-García, 1995b: 86–87), this Central American endemic is restricted to mixed woodland of *Pinus*, *Quercus* and *Liquidambar*. The vegetation class occurs in Belize in the southern part of the Chiquibul Forest and probably will be found in other little-explored parts of the Maya Mountain Divide. Though the presence of *Liquidambar styraciflua* L. in Belize has been reported since the first half of the twentieth century (Stevenson, 1928) and Standley & Record (1936: 147) considered that it occurred 'in some abundance in the higher parts of the Cockscomb Mountains', material was not collected until very recently. A specimen can be found in the Belize National Herbarium (Belize: Cayo; *J.C. Meerman* s.n. (BRH), cf. Vargas & Shawe, 1997: 67). General collections from this class of vegetation were not made until 1998 by Monro and Cafferty, who provide the first record of *Cibotium regale*.

## DRYOPTERIDACEAE

- Arachniodes denticulata* (Sw.) Ching in *Acta Bot. Sin.* **10**: 260 (1962)<sup>59: 211</sup>
- Toledo, *B.H. Allen* 15391 (AAU<sup>59, 115</sup>, MO<sup>3, 115</sup>).
- Didymochlaena truncatula* (Sw.) J. Sm. in *J. Bot. (Hooker)* **4**: 196 (1841)<sup>60: 212</sup>
- Stann Creek, *W.A. Schipp* 406 (BRH<sup>125</sup>, MO<sup>60, 115</sup>); Toledo, *B.K. Holst* et al. 5160 (BRH<sup>115</sup>, MO<sup>115</sup>, SEL).
- Olfersia cervina* (L.) Kunze in *Flora* **7**: 312 (1824)<sup>61: 214</sup>
- Stann Creek, *W.A. Schipp* 402 (BRH<sup>125</sup>, F<sup>36, 61, 115</sup>, GH<sup>36</sup>, MICH<sup>36</sup>, NY<sup>36</sup>, UC<sup>36</sup>, US<sup>36</sup>, Z<sup>36</sup>); Toledo, *G. Davidse* & *D.L. Holland* 36737 (MO<sup>115</sup>).
- Polybotrya caudata* Kunze in *Linnaea* **9**: 23 (1834)<sup>62: 217</sup>
- Cayo, *C.L. Lundell* 6416 (MICH<sup>28</sup>); Stann Creek, *W.A. Schipp* 273 (BRH<sup>125</sup>, F<sup>62, 115</sup>).
- Polybotrya osmundacea* Humb. & Bonpl. ex Willd., *Sp. pl.* **5**: 99 (1810)
- Toledo, *B.K. Holst* 4048 (MO<sup>91, 115</sup>), *B.K. Holst* 4049 (MO<sup>91, 115</sup>).
- Not recorded for Belize in *Flora Mesoamericana* (Moran, 1995z:

218), although the species was recorded for Toledo District by Parker et al. (1993) and material bearing this identification is at MO and listed in TROPICOS.

*Polybotrya polybotryoides* (Baker) H. Christ in *Bull. Herb. Boiss.* sér. 2, 1: 70 (1901)<sup>62: 218</sup>

Cayo, *T.B. Croat* 24566 (MO<sup>62, 115</sup>); Toledo, *B.K. Holst* 4047 (MO<sup>91, 115</sup>).

*Stigmatopteris sordida* (Maxon) C. Chr., *Index filic.*, *Suppl.* 3: 175 (1934)

Toledo, *B.K. Holst* 5897 (MO<sup>115</sup>, UC).

Not recorded for Belize in the published version of *Flora Mesoamericana* (Moran, 1995a: 226), but included in the Internet version based on a specimen from Toledo District (*B.K. Holst* 5897, UC) collected in 1997 and identified by A.R. Smith in December of the same year. This is also the first record of the genus from Belize.

## GLEICHENIACEAE

*Dicranopteris flexuosa* (Schrad.) Underw. in *Bull. Torrey Bot. Club* 34: 254 (1907)<sup>38: 58</sup>

Belize, *P.H. Gentle* 9558 (MO<sup>38, 115</sup>, US).

*Dicranopteris pectinata* (Willd.) Underw. in *Bull. Torrey Bot. Club* 34: 260 (1907)<sup>38: 58</sup>

Cayo, *C.L. Lundell* 6603 (MICH<sup>28</sup>, NY, US); Stann Creek, *W.A. Schipp* 350 (BRH<sup>125</sup>, K!, NY, US); Toledo, *D.L. Spellman & W.W. Newey* 1648 (MO<sup>38, 115</sup>).

*Sticherus palmatus* (J.H. Schaffn. ex Underw.) Copel., *Gen. fil. (Ann. Cryptog. Phytopathol.* 5): 28 (1947)<sup>39: 61</sup>

Toledo, *B.K. Holst* 4270 (MO<sup>39, 91, 115</sup>).

## GRAMMITIDACEAE

*Cochlidium linearifolium* (Desv.) Maxon ex C. Chr. in *Dansk Botanisk Arkiv* 6(3): 23 (1929)<sup>6: 371</sup>

Cayo, *G. Davidse & A.E. Brant* 33087 (MO<sup>115</sup>); Toledo, *B.H. Allen* 15304 (MO<sup>3, 6, 115</sup>).

*Cochlidium serrulatum* (Sw.) L.E. Bishop in *Amer. Fern J.* 68: 80 (1978)<sup>6: 372</sup>

Cayo, *G. Davidse & A.E. Brant* 33088 (MO<sup>115</sup>); Toledo, *W.A. Schipp* 213 (NY, UC<sup>6</sup>).

*Enterosora ecostata* (Sodiolo) L.E. Bishop in *Syst. Bot.* 17(3): 348, f. 1A-C (1992)<sup>112: 373</sup>

Toledo, *W.A. Schipp* S-801[a] (F<sup>117</sup>, GH<sup>129</sup>).

*Lellingeria mitchellae* (Baker ex Hemsl.) A.R. Sm. & R.C. Moran in *Amer. Fern J.* 81: 85 (1991)<sup>77: 378</sup>

Cayo, *A. Hughes* 48 (BM-000531771!); Orange Walk, *Mitchell s.n.* (K-holotype<sup>10, 19, 77, 106</sup>); Toledo, *G. Davidse* 36126 (MO<sup>115</sup>). Based on a Belizean type, this Central American endemic occurs from Chiapas to Panama and is unique in having setulose sporangia capsules.

*Micropolypodium taenifolium* (Jenman) A.R. Sm. in *Novon* 2: 423 (1992)

Toledo, *G. Davidse & D.L. Holland* 36701 (MO<sup>115</sup>), 36782 (MO<sup>115</sup>), *T.E. Hawkins* 1526 (MO<sup>115</sup>), *B.K. Holst* et al. 5248 (MO<sup>115</sup>).

Not included in *Flora Mesoamericana* (Smith, 1995b: 384) but included here on the basis of material collected from Toledo District in 1996–1997 and identified by A.R. Smith in 1997–1998. This is the first record of the genus from Belize.

*Terpsichore asplenifolia* (L.) A.R. Sm. in *Novon* 3: 485 (1993)<sup>114: 387</sup>

Cayo, *B.H. Allen* 15174 (MO<sup>3, 114, 115</sup>); Toledo, *B.K. Holst* et al. 5189 (MO<sup>115</sup>).

*Terpsichore lehmanniana* (Hieron.) A.R. Sm. in *Novon* 3: 487 (1993)<sup>114: 389</sup>

Cayo, *B.H. Allen* 15215 (MO<sup>3, 114, 115</sup>); Toledo, *G. Davidse & D.L. Holland* 36738 (MO<sup>115</sup>).

*Terpsichore mollissima* (Fée) A.R. Sm. in *Novon* 3: 487 (1993)<sup>114: 390</sup>

Toledo, *B.K. Holst* 4040 (MO<sup>91, 115</sup>).

## HYMENOPHYLLACEAE

*Hymenophyllum abruptum* Hook., *Sp. fil.* 1: 88, t. 31B (1844)<sup>84: 64</sup>

Cayo, *H.H. Bartlett* 11751 (F<sup>84, 115</sup>).

*Hymenophyllum fucoides* (Sw.) Sw. in *J. Bot. (Schrader)* 1800(2): 99 (1801)<sup>84: 66</sup>

Toledo, *B.H. Allen* 15305 (MO<sup>3, 84, 115</sup>).

*Hymenophyllum hirsutum* (L.) Sw. in *J. Bot. (Schrader)* 1800(2): 99 (1801)<sup>84: 66</sup>

Cayo, *B.H. Allen* 15203A (MO<sup>3, 84, 115</sup>); Toledo, *B.K. Holst* et al. 5304 (MO<sup>115</sup>).

*Hymenophyllum polyanthos* (Sw.) Sw. in *J. Bot. (Schrader)* 1800(2): 102 (1801)<sup>84: 68</sup>

Cayo, *C. Whiteford* 9141 (BM); Stann Creek, *W.A. Schipp* 114 (F<sup>84, 115</sup>); Toledo, *G. Davidse* 36124 (MO<sup>115</sup>).

*Hymenophyllum pulchellum* Schldt. & Cham. in *Linnaea* 5: 618 (1830)<sup>84: 68</sup>

Toledo, *B.K. Holst* 4041 (MO<sup>84, 91, 115</sup>).

*Hymenophyllum sieberi* (C. Presl) Bosch in *Ned. Kruidk. Arch.* 4: 414 (1858).

Toledo, *B.K. Holst* et al. 5296 (BRH<sup>115</sup>, MO<sup>115</sup>, UC<sup>115</sup>), *B.K. Holst* 5974 (MO<sup>115</sup>).

Not listed for Belize in the published version of *Flora Mesoamericana* (Pacheco, 1995a: 69), *H. sieberi* is included in the Internet version on the basis of a collection from Toledo District (*B.K. Holst* et al. 5296, UC) made in 1996 and identified by A.R. Smith in May 1997.

*Trichomanes ankersii* C. Parker ex Hook. & Grev., *Icon. filic.* 2(11): t. 201 (1831)

No material has been collected from this far north in Central America according to *Flora Mesoamericana* (Pacheco, 1995b: 73), though it is recorded from Nicaragua to Panama. Standley & Record (1936: 60) listed the taxon for Belize but without explicit reference to a specimen. There may be material at F, though this needs further investigation to verify the identification.

*Trichomanes capillaceum* L., *Sp. pl.* 2: 1099 (1753)<sup>85: 73</sup>

*Trichomanes capillaceum* var. *capillaceum*<sup>85: 74</sup>

Toledo, *B.H. Allen* 15411 (MO<sup>3, 85, 115</sup>).

*Trichomanes collarium* Bosch in *Ned. Kruidk. Arch.* 4: 368 (1858)<sup>85: 74</sup>

Stann Creek, *W.A. Schipp* 364 (BM-000543308!, K!, NY);

Toledo, *M.E. Peck* 601 (F<sup>85, 115</sup>, K!).

*Trichomanes crispum* L., *Sp. pl.* 2: 1097 (1753)<sup>85: 74</sup>

Cayo, *B.H. Allen* 15172 (MO<sup>3, 115</sup>); Toledo, *B.K. Holst* 4023 (MO<sup>85, 91, 115</sup>).

*Trichomanes curtii* Rosenst. in *Repert. Spec. Nov. Regni Veg.* 22(606–608): 5 (1925)<sup>85: 75</sup>

No specimen was listed for Belize in *Flora Mesoamericana* (Pacheco, 1995b: 75), but reference is made to *Flora of Guatemala* (Stolze, 1976: 78). The latter author also did not cite material, but made explicit reference to 'British Honduras'. There may be supporting material at F. *Trichomanes curtii* is also recorded from Chiapas and Guatemala, extending southeast from Nicaragua to Colombia.

*Trichomanes diaphanum* Kunth in Humb., Bonpl. & Kunth, *Nov. Gen. Sp.* 1: 25 (1816)<sup>85: 75</sup>

Toledo, *B.K. Holst* et al. 5214 (MO<sup>115</sup>).

*Trichomanes diversifrons* (Bory) Mett. ex Sadeb. in Engl. & Prantl, *Nat. Pflanzenfam.* **1**(4): 108 (1899)<sup>85: 75</sup>  
Belize, C. Whitefoord 1210 (BM-000543306!); Stann Creek, W.A. Schipp 237 (K!, NY); Toledo, T.B. Croat 24514 (F<sup>85, 115</sup>).

*Trichomanes ekmanii* Wess. Boer in *Acta Bot. Neerl.* **11**: 319, f. 33 (1962)<sup>85: 75</sup>  
Stann Creek, W.A. Schipp 324 (BM-000543311!, BRH<sup>125</sup>, K, MO<sup>85, 115</sup>, NY).

*Trichomanes elegans* Rich. in *Actes Soc. Hist. Nat. Paris* **1**: 114 (1792)

Toledo, E.J.F. Campbell s.n. (K!), Mitchell s.n. (K!).  
First collected from Belize in 1875 (Mitchell s.n., K!) but not recorded in any subsequent publication for the country either as an accepted name, a synonym or as a misapplied name. *Trichomanes elegans* has previously been recorded in Central America from Honduras to Panama (Pacheco, 1995b: 75), from South America and the Caribbean region, and is to be expected from Belize.

*Trichomanes galeottii* E. Fourn. in *Bull. Soc. Bot. France* **15**: 147–148 (1868)<sup>85: 76</sup>  
Cayo, H.H. Bartlett 11640 (MO<sup>85, 115</sup>); Stann Creek, W.A. Schipp 482 (BM-000543305!, BRH<sup>125</sup>, NY); Toledo, G. Davidse & A.E. Brant 32238 (MO<sup>115</sup>).

*Trichomanes godmanii* Hook. in Baker in *J. Linn. Soc., Bot.* **9**: 337, t. 8A (1866)<sup>85: 76</sup>  
Cayo, C.L. Lundell 6187 (MICH<sup>28</sup>, NY); Toledo, F. Boutin & Schlosser 5023 (MO<sup>85, 115</sup>).

*Trichomanes hymenoides* Hedw., *Fil. gen. sp.*: t. 3, f. 3 (1799)<sup>85: 77</sup>  
No specimen was listed for Belize in *Flora Mesoamericana* (Pacheco, 1995b: 77), but reference is made to Stolze (1976: 81–82) who explicitly cited 'British Honduras' in the distribution for *Flora of Guatemala*, but did not mention any material. There may be a specimen at F to verify the occurrence in Belize.

*Trichomanes krausii* Hook. & Grev., *Icon. filic.* **2**: t. 149 (1830)  
Cayo, T.E. Hawkins 1179 (MO<sup>115</sup>); Orange Walk, C. Whitefoord 8095 (BM-000543310!); Toledo, C. Whitefoord 1984 (BM-000543309!).  
Recorded for Belize since *Forests and flora of British Honduras* (Standley & Record, 1936: 61). Stolze (1976: 83) gave the distribution as 'Mexico to Panama', which may be taken as an implicit reference to Belize though no material was listed for 'British Honduras'. Pacheco (1995b: 78) did not list the species for Belize in the published version of *Flora Mesoamericana*, though several specimens have been collected recently and appear on TROPICOS.

*Trichomanes membranaceum* L., *Sp. pl.* **2**: 1097 (1753)<sup>85: 78</sup>  
Stann Creek, W.A. Schipp S-108 (F<sup>85, 115</sup>).

*Trichomanes ovale* (E. Fourn.) Wess. Boer in *Acta Bot. Neerl.* **11**: 296 (1962)  
Toledo, C. Whitefoord 1244 (BM, MO<sup>115</sup>).  
Not recorded for Belize in the published version of *Flora Mesoamericana* (Pacheco, 1995b: 79) but material collected in 1976 (C. Whitefoord 1244, MO) is added to the Internet version as an extended range record.

*Trichomanes pinnatum* Hedw., *Fil. gen. sp.*: t. 4, f. 1 (1799)<sup>85: 80</sup>  
Cayo, H.H. Bartlett 11726 (NY); Stann Creek, W.A. Schipp 359 (K!, MO<sup>85, 115</sup>, NY); Toledo, E.J.F. Campbell 86 (K!).

*Trichomanes polypodioides* L., *Sp. pl.* **2**: 1098 (1753)<sup>85: 80</sup>  
Stann Creek, W.A. Schipp S-83 (F<sup>85, 115</sup>, K!); Toledo, B.K. Holst et al. 5193 (MO<sup>115</sup>).

*Trichomanes punctatum* Poir. in Lam., *Encycl.* **8**: 64 (1808)<sup>85: 80</sup>

*Trichomanes punctatum* subsp. *sphenoides* (Kunze) Wess. Boer in *Acta Bot. Neerl.* **11**: 301 (1962)<sup>85: 81</sup>

Cayo, A. Hughes 129 (BM-000557729!); Toledo, B.H. Allen 15442 (MO<sup>3, 85, 115</sup>).

*Trichomanes pyxidiferum* L., *Sp. pl.* **2**: 1098 (1753)<sup>85: 81</sup>

Cayo, A. Hughes 126 (BM-000557730!); Toledo, B.K. Holst 4310 (MO<sup>85, 91, 115</sup>).

*Trichomanes radicans* Sw. in *J. Bot. (Schrader)* **1800**(2): 97 (1801)  
Toledo, B.K. Holst 5815 (MO<sup>115</sup>, UC), B.K. Holst 5816 (MO<sup>115</sup>).  
Not recorded for Belize in the published version of *Flora Mesoamericana* (Pacheco, 1995b: 81) but included in the Internet version. The first record for the country is material collected from Toledo District on vertical rocks in waterfall spray (B.K. Holst 5815, UC) in 1997, and identified by A.R. Smith in December of the same year.

*Trichomanes rigidum* Sw., *Prodr.*: 137 (1788)<sup>85: 82</sup>

Cayo, B.H. Allen 15186 (MO<sup>3, 115</sup>); Toledo, B.K. Holst et al. 5197 (MO<sup>115</sup>).

*Trichomanes tuerckheimii* H. Christ in *Hedwigia* **44**: 361 (1905)<sup>85: 83</sup>  
Belize, C. Whitefoord 1298 (BM-000543313!, MO<sup>115</sup>); Stann Creek, W.A. Schipp S-21 (F<sup>85, 115</sup>, US); Toledo, G. Davidse & M. Meadows 35841 (MO<sup>115</sup>).

## ISOËTACEAE

*Isoëtes cubana* Engelm. ex Baker in *J. Bot.* **18**: 110 (1880)<sup>21: 42</sup>  
Toledo, M.E. Peck 420 (GH<sup>21</sup>, NY).

## LOMARIOPSIDACEAE

*Bolbitis bernoullii* (Kuhn ex H. Christ) Ching in C. Chr., *Index filic., Suppl.* **3**: 47 (1934)<sup>20: 248</sup>  
Toledo, W.A. Schipp S-776 (GH<sup>20, 115</sup>).

*Bolbitis hastata* (E. Fourn.) HENNIPMAN in *Amer. Fern J.* **65**: 1975 (1975)  
Toledo, B.K. Holst 5757 (MO<sup>115</sup>, UC).

Not recorded for Belize in the published version of *Flora Mesoamericana* (Hennipman & Moran, 1995: 248), but included in the Internet version based on a specimen (B.K. Holst 5757, UC) collected from Toledo District in 1997 and identified by A.R. Smith later that year.

*Bolbitis hemiotis* (Maxon) Ching in C. Chr., *Index filic., Suppl.* **3**: 48 (1934)<sup>20: 248</sup>  
Toledo, B.H. Allen 15441 (MO<sup>3, 20, 115</sup>).

*Bolbitis pergamentacea* (Maxon) Ching in C. Chr., *Index filic., Suppl.* **3**: 49 (1934)<sup>20: 249</sup>  
Toledo, W.A. Schipp S-764 (GH<sup>20, 115</sup>).

*Bolbitis portoricensis* (Spreng.) HENNIPMAN in *Amer. Fern J.* **65**: 30 (1975)<sup>20: 249</sup>  
Stann Creek, W.A. Schipp 526 (BRH<sup>125</sup>, NY); Toledo, G. Davidse & A.E. Brant 32381 (MO<sup>20, 115</sup>).

*Elaphoglossum christianeae* Mickel in *Novon* **2**: 371 (1992)  
Toledo, G. Davidse & H.B. Buchanan 36941 (MO<sup>115</sup>).

Not recorded for Belize in *Flora Mesoamericana* (Mickel, 1995a: 263), this Central American endemic has been recorded formerly from Costa Rica and Panama but to that distribution can be added a specimen collected in Toledo District of Belize in 1997 and identified by A.F. Rojas-Alvarado in 1998.

*Elaphoglossum decursivum* Mickel in *Brittonia* **32**: 334 (1980)  
Toledo, G. Davidse & D.L. Holland 36729 (MO<sup>115</sup>), D.L. Holland & B. Kid 90 (MO<sup>115</sup>), B.K. Holst 5924 (MO<sup>115</sup>).

This taxon is not recorded for Central America in the published version of *Flora Mesoamericana* (Mickel, 1995a), but appended to the Internet version on the basis of recent identifications by A.R. Smith of material from Belize, Honduras and Costa Rica.

All of the Belize material listed above was collected in 1997 from Toledo District.

- Elaphoglossum erinaceum* (Fée) T. Moore, *Index fil.*: 9 (1857)  
Toledo, G. Davidse & D.L. Holland 36764 (MO<sup>115</sup>).  
Not included in the published version of *Flora Mesoamericana* (Mickel, 1995a: 265) but listed for Belize in the Internet version based on the collection listed above from Toledo District made in 1997 and identified by A.R. Smith in 1998.
- Elaphoglossum eximifforme* Mickel in *Novon* 2: 374 (1992)  
Toledo, B.K. Holst 5672 (MO<sup>115</sup>).  
Not recorded for Belize in *Flora Mesoamericana* (Mickel, 1995a: 265), this Central American endemic was formerly known only from Costa Rica and Panama. The material included here was originally identified as *E. latifolium* (Sw.) Sm. by A.R. Smith but re-determined as *E. eximifforme* by A.F. Rojas-Alvarado in October 1998.
- Elaphoglossum glaucum* T. Moore, *Index fil.*: 10 (1857)  
Toledo, B.K. Holst 3869 (MO<sup>91, 115</sup>).  
Not recorded for Belize in *Flora Mesoamericana* (Mickel, 1995a: 267), though recorded from the neighbouring countries of Mexico, Guatemala and Honduras. The record here is tentative as it is based on material from Toledo District identified by R. Moran in 1992 and cited by Parker et al. (1993: 40), yet excluded from the flora.
- Elaphoglossum guatemalense* (Klotzsch) T. Moore in *Parker's Cat.* (1858)<sup>32: 268</sup>  
Cayo, B.H. Allen 15175 (MO<sup>3, 115</sup>); Toledo, G. Davidse & A.E. Brant 32239 (MO<sup>32, 115</sup>).
- Elaphoglossum herminieri* (Bory ex Fée) T. Moore, *Index fil.*: xvi (1857)<sup>32: 268</sup>  
Toledo, F. Boutin & Schlosser 5088 (NY<sup>32</sup>).
- Elaphoglossum herrerae* A. Rojas in *Brenesia* 45–46: 13, f. 5 (1996)  
Toledo, B.K. Holst 5670 (MO<sup>115</sup>).  
A new species provisionally included in the Internet version of *Flora Mesoamericana* based on a specimen from Toledo District listed above and identified by A.F. Rojas-Alvarado in October 1998. This taxon was originally considered to be endemic to the Cordillera de Guanacaste in Costa Rica.
- Elaphoglossum latifolium* (Sw.) J. Sm. in *London J. Bot.* 1: 197 (1842)<sup>32: 270</sup>  
Toledo, P.H. Gentle 3756 (NY<sup>32</sup>).
- Elaphoglossum latum* (Mickel) Atehortúa ex Mickel in *Fieldiana, Bot. n.s.*, 27: 123 (1991)<sup>32: 271</sup>  
Toledo, T.B. Croat 24313 (MO<sup>32, 115</sup>).
- Lomariopsis japurensis* (Mart.) Sm., *Hist. fil.*: 140 (1875)<sup>66: 284</sup>  
Toledo, T.B. Croat 24393 (MO<sup>66, 115</sup>).
- Lomariopsis recurvata* Fée, *Mém. Foug.* 2: 68 (1845)<sup>66: 284</sup>  
Cayo, T.B. Croat 23800 (MO<sup>66</sup>); Stann Creek, R. Rivero et al. 2524 (BRH<sup>125</sup>); Toledo, B.K. Holst 4417 (MO<sup>91, 115</sup>).
- Lomariopsis vestita* E. Fourn. in *Bull. Soc. Bot. France* 19: 250 (1872)<sup>66: 284</sup>  
Toledo, F. Boutin & Schlosser 5093 (MO<sup>66, 115</sup>).
- Peltapteris peltata* (Sw.) C.V. Morton in *Amer. Fern J.* 45: 13 (1955)  
Cayo, B.H. Allen 15275 (BM-000543333, MO<sup>3, 115</sup>); Toledo, C. Whitefoord 1727 (BM-000543338!).  
Curiously omitted for Belize in *Flora Mesoamericana* (Mickel, 1995b: 285) although it was cited under the name *Elaphoglossum peltatum* (Sw.) Urb. by Parker et al. (1993: 40) and there are many specimens listed under the same synonym in TROPICOS. The earliest collection from Belize seen to date (*C.W. Whitefoord* 1727, BM) was collected in May 1979. Mickel listed four separate forms of this species, but the northern material from

Mexico, Guatemala and Honduras all falls within typical form *peltata*.

## LOPHOSORIACEAE

- Lophosoria quadripinnata* (J.F. Gmel.) C. Chr., *Nat. Hist. Juan Fernandez* 2: 16 (1920)  
*Lophosoria quadripinnata* var. *quadripinnata*  
Toledo, T.E. Hawkins 1540 (MO<sup>115</sup>, UC).  
Not listed for Belize in the published version of *Flora Mesoamericana* (Riba, 1995a: 85), but included in the Internet version on the basis of a collection from Toledo District (*T.E. Hawkins* 1540, UC) made in 1996 and identified by A.R. Smith in January 1998. This is the first record of both the genus and the family for Belize.

## LYCOPODIACEAE

- Huperzia dichaeoides* (Maxon) Holub in *Folia Geobot. Phytotax.* 20: 72 (1985)<sup>82: 11</sup>  
Toledo, B.H. Allen 15384 (BM-000543283!, MO<sup>3, 82, 115</sup>).
- Huperzia dichotoma* (Jacq.) Trevis. in *Atti Soc. Ital. Sci. Nat.* 17: 248 (1874)<sup>82: 11</sup>  
Toledo, P.H. Gentle 3034 (GH<sup>82, 115</sup>).
- Huperzia linifolia* (L.) Trevis. in *Atti Soc. Ital. Sci. Nat.* 17: 248 (1874)<sup>82: 13</sup>  
*Huperzia linifolia* var. *linifolia*<sup>82: 13</sup>  
Cayo, B.H. Allen 15280 (MO<sup>3, 115</sup>); Toledo, W.A. Schipp 811 (US<sup>82, 115</sup>).
- Huperzia pithyoides* (Schltdl. & Cham.) Holub in *Folia Geobot. Phytotax.* 20: 76 (1985)  
Toledo, B.K. Holst 4381 (MO<sup>91</sup>).  
Not listed for Belize in *Flora Mesoamericana* (Øllgaard, 1995a: 15) though it was recorded from all surrounding countries and to be expected from Belize. *Huperzia pithyoides* was first cited for the country by Parker et al. (1993: 40) based on the specimen listed above collected from the Columbia River Forest Reserve in Toledo District.
- Huperzia reflexa* (Lam.) Trevis. in *Atti Soc. Ital. Sci. Nat.* 17: 248 (1874)<sup>82: 16</sup>  
*Huperzia reflexa* var. *reflexa*<sup>82: 16</sup>  
Toledo, M.C. Carlson 2617 (F<sup>82, 115</sup>).
- Huperzia taxifolia* (Sw.) Trevis. in *Atti Soc. Ital. Sci. Nat.* 17: 248 (1874)<sup>82: 17</sup>  
Cayo, C.L. Lundell 6258 (MICH<sup>28</sup>, NY<sup>82, 115</sup>); Toledo, G. Davidse 36384 (MO<sup>115</sup>).
- Lycopodiella caroliniana* (L.) Pic. Serm., *Webbia* 23: 165 (1968)<sup>83: 19</sup>  
*Lycopodiella caroliniana* var. *meridionalis* (Underw. & F.E. Lloyd) B. Øllg. & P.G. Windisch in *Bradea* 5: 27 (1987)<sup>83: 19</sup>  
Belize, C. Whitefoord 2405 (BM-000543290!); Cayo, G. Davidse & A.E. Brant 33079 (BM-000543288!, BM-000543289!, MO<sup>115</sup>); Stann Creek, W.A. Schipp 578 (BM-000543286!, MO<sup>115</sup>, NY, S<sup>83, 115</sup>).
- Lycopodiella cernua* (L.) Pic. Serm. in *Webbia* 23: 166 (1968)<sup>83: 19</sup>  
Belize, C. Whitefoord 2570 (BM-000543294!); Cayo, J.N. Hedger 127 (BM-000543297!); Stann Creek, W.A. Schipp 234 (BM-000543243!, NY); Toledo, P.H. Gentle 6781 (BM-000543244!, NY).

## MARATTIACEAE

- Danaea elliptica* Sm. in Rees, *Cycl.* 11: Danaea no. 2 (1808)<sup>9: 49</sup>  
Cayo, C. Whitefoord 1215 (BM-000543246!); Stann Creek, T.B. Croat 24525 (MO<sup>9, 115</sup>); Toledo, B.K. Holst 4305 (MO<sup>91, 115</sup>).



*Danaea nodosa* (L.) Sm. in *Mém. Acad. Roy. Sci. (Turin)* **5**(1790–1791): 420, t. 9, f. 11 (1793)<sup>9:49</sup>

Cayo, B.H. Allen 15185 (MO<sup>3,115</sup>); Stann Creek, W.A. Schipp 422 (F<sup>9,115</sup>, US); Toledo, B.K. Holst et al. 5503 (MO<sup>115</sup>).

*Marattia excavata* Underw. in Britton, *N. Amer. fl.* **16**(1): 22 (1909) Toledo, B.K. Holst et al. 5300 (BRH<sup>115</sup>, MO<sup>115</sup>, UC<sup>115</sup>).

Not listed for Belize in the published version of *Flora Mesoamericana*, (Pérez-García, 1995a: 50) but included in the Internet version on the basis of a collection from Toledo District (B.K. Holst et al. 5300, UC) made in 1996 and identified by A.R. Smith in April 1997. This is the first record of the genus in Belize. The specimen is cited as 'B (Holst et al. 5300, US)' in the Internet description but it is not clear from the TROPICOS account if there is a duplicate at US or if this is an error for UC.

## METAXYACEAE

*Metaxya rostrata* (Kunth) C. Presl, *Tent. pterid.*: 60, t. 1, f. 5 (1836)<sup>100:86</sup>

Cayo, D. Burch 5881 (MO<sup>115</sup>, NY); Stann Creek, W.A. Schipp 89 (BRH<sup>125</sup>, NY); Toledo, P.H. Gentle 2631 (GH<sup>100</sup>).

## OPHIOGLOSSACEAE

*Cheiroglossa palmata* (L.) C. Presl, *Suppl. tent. pterid.*: 57 (1845)<sup>126:46</sup>

Cayo, B.H. Allen 15170 (AAU<sup>126</sup>, MO<sup>3,115</sup>); Toledo, B.K. Holst 5935 (MO<sup>115</sup>).

*Ophioglossum nudicaule* L.f., *Suppl. pl.*: 433 (1782)<sup>126:47</sup>

Belize, C. Whitefoord 2605 (BM-000543245!); Stann Creek, P.H. Gentle 2997 (MO<sup>115,126</sup>).

## POLYPODIACEAE

*Campyloneurum angustifolium* (Sw.) Fée, *Mém. Foug.* **5**: 257 (1852)<sup>25:335</sup>

Cayo, D.R. Hunt 7054 (K!); Toledo, T.E. Hawkins 1348 (MO<sup>115</sup>).

*Campyloneurum aphanophlebium* (Kunze) T. Moore, *Index fil.*: 223 (1861)<sup>25:335</sup>

Toledo, P.H. Gentle 7327 (US<sup>25</sup>).

*Campyloneurum brevifolium* (Lodd. ex Link) Link, *Fil. spec.*: 124 (1841)<sup>25:335</sup>

Cayo, A. Hughes 96 (BM-000531759!, BM-000531835!); Stann Creek, W.A. Schipp 527 (BRH<sup>125</sup>, K); Toledo, P.H. Gentle 7835 (F<sup>25</sup>, US).

*Campyloneurum costatum* (Kunze) C. Presl, *Tent. pterid.*: 190 (1836)<sup>25:336</sup>

Toledo, P.H. Gentle 6792 (US<sup>25</sup>).

*Campyloneurum fasciale* (Humb. & Bonpl. ex Willd.) C. Presl, *Tent. pterid.*: 190 (1836)<sup>25:336</sup>

Cayo, C. Whitefoord 2044 (BM, MO<sup>25</sup>); Toledo, G. Davidse 36003 (MO<sup>115</sup>).

*Campyloneurum phyllitidis* (L.) C. Presl, *Tent. pterid.*: 190 (1836)<sup>25:337</sup>

Belize, C.L. Lundell s.n. (K!); Cayo, A. Hughes 25b (BM-000531767!); Toledo, P.H. Gentle 1108 (F<sup>25</sup>, K).

*Campyloneurum repens* (Aubl.) C. Presl, *Tent. pterid.*: 190 (1836)<sup>25:337</sup>

Cayo, C.L. Lundell 6262 (MICH<sup>28</sup>, US); Toledo, T.B. Croat 24462 (MO<sup>25</sup>).

*Campyloneurum xalapense* Fée, *Mém. Foug.* **5**: 258 (1852)<sup>25:337</sup>

Toledo, P.H. Gentle 6515 (F<sup>25</sup>, US).

*Microgramma lycopodioides* (L.) Copel., *Gen. fil. (Ann. Cryptog. Phytopathol.* **5**): 185 (1947)<sup>69:339</sup>

Cayo, C.L. Lundell 6287 (MICH<sup>28</sup>, NY); Stann Creek, R. Rivero et al. 2555 (BRH<sup>125</sup>); Toledo, C. Whitefoord 1863 (BM, CR<sup>69</sup>).

*Microgramma nitida* (J. Sm.) A.R. Sm. in *Proc. Calif. Acad. Sci.* ser. **4**, **40**(8): 230 (1975)<sup>69:339</sup>

Orange Walk, G. Davidse & A.E. Brant 32765 (MO<sup>115</sup>); Toledo, D.L. Spellman & W.W. Newey 2105 (MO<sup>69</sup>).

*Microgramma percussa* (Cav.) de la Sota in *Physis (A, B & C)* **44**(106, Secc. C): 28 (1986)<sup>69:339</sup>

Cayo, A. Hughes 77 (BM-000531808!, BM-000557711!); Toledo, G. Davidse & A.E. Brant 32027 (MO<sup>69,115</sup>).

*Microgramma reptans* (Cav.) A.R. Sm. in *Proc. Calif. Acad. Sci.* ser. **4**, **40**(8): 230 (1975)<sup>69:340</sup>

Stann Creek, W.A. Schipp 210 (BRH<sup>125</sup>, NY); Toledo, C. Whitefoord 1590 (BM, CR<sup>69</sup>).

*Neurodium lanceolatum* (L.) Fée, *Mém. Foug.* **3**: 28 (1852)<sup>87:341</sup>

Cayo, P.H. Gentle 2518 (MEXU<sup>87,115</sup>, NY); Toledo, G. Davidse & A.E. Brant 32346 (MO<sup>115</sup>).

*Niphidium crassifolium* (L.) Lellinger in *Amer. Fern J.* **62**: 106 (1972)<sup>70:341</sup>

Cayo, A. Hughes 21 (BM-000531766!<sup>22</sup>, BM-000531797!); Stann Creek, W.A. Schipp 88 (BRH<sup>125</sup>); Toledo, P.H. Gentle 4964 (MO<sup>70,115</sup>).

*Niphidium oblanceolatum* A. Rojas in *Brenesia* **45–46**: 28, f. 1 (1996)

The protologue of this recently described species includes Belize in the distribution, and the taxon is provisionally accepted for the Internet version of *Flora Mesoamericana*.

*Pecluma atra* (A.M. Evans) M.G. Price in *Amer. Fern J.* **73**: 113 (1983)<sup>71:342</sup>

Cayo, C.L. Lundell 6639 (GH, MICH<sup>28</sup>, US-1638286<sup>15,71</sup>); Toledo, M.E. Peck 820 (NY).

*Pecluma dispersa* (A.M. Evans) M.G. Price in *Amer. Fern J.* **73**: 114 (1983)<sup>71:343</sup>

Cayo, A. Hughes 38 (BM-000531768!<sup>22</sup>, BM-000531855!); Toledo, T.B. Croat 24176 (MO<sup>71,115</sup>).

*Pecluma divaricata* (E. Fourn.) Mickel & Beitel in *Mem. New York Bot. Gard.* **46**: 269 (1988)<sup>71:343</sup>

Toledo, B.K. Holst 4460 (MO<sup>71,91,115</sup>).

*Pecluma pectinata* (L.) M.G. Price in *Amer. Fern J.* **73**: 115 (1983)

Cayo, D.R. Hunt 605 (BM), G.R. Proctor 29841 (BRH<sup>125</sup>).

Not recorded for Belize in *Flora Mesoamericana* (Moran, 1995a: 344) though specimens have been collected under the synonym *Polypodium pectinatum* L. This record requires further investigation.

*Pecluma plumula* (Humb. & Bonpl. ex Willd.) M.G. Price in *Amer. Fern J.* **73**: 115 (1983)<sup>71:345</sup>

Belize, C. Whitefoord 1242 (BM); Cayo, A. Hughes 120 (BM-000557724!<sup>22</sup>); Corozal, G. Davidse & A.E. Brant 32534 (MO<sup>71,115</sup>); Orange Walk, C.L. Lundell 537 (NY); Toledo, T.E. Hawkins 1717 (MO<sup>115</sup>).

*Phlebodium decumanum* (Willd.) J. Sm. in *J. Bot. (Hooker)* **4**: 59 (1841)<sup>72:345</sup>

Toledo, A.H. Gentry 88 (F<sup>72</sup>).

*Pleopeltis astrolepis* (Liebm.) E. Fourn., *Méxic. pl.* **1**: 87 (1872)<sup>26:347</sup>

Cayo, C.L. Lundell 6450 (MICH<sup>28</sup>, NY<sup>26</sup>); Toledo, W.A. Schipp 923 (BRH<sup>125</sup>, MO<sup>115</sup>).

*Pleopeltis crassinervata* (Fée) T. Moore, *Index fil.*: 345 (1862)

Not recorded from Belize in *Flora Mesoamericana* (Lorea Hernández, 1995: 348). This taxon was originally described from Mexico and listed by Weatherby (1922) from Veracruz, Chiapas and Guatemala. Lorea Hernández expanded this distribution to include Honduras, Nicaragua and Costa Rica. Seymour (1975: 167) had listed Weatherby's combination for the taxon in his notes on the genus *Polypodium* in Nicaragua, but with the incorrect epithet 'crassinervata'. It is clear from the exact reference to Weatherby that this taxon is intended, and Seymour listed Central American material including a specimen from 'British Honduras' at GH. This material needs locating and the identification verifying.

- × *Pleuroderris michleriana* (D.C. Eaton) Maxon in *J. Wash. Acad. Sci.* **24**: 551, f. 1–2 (1934), pro sp.  
Stann Creek, *R. Rivero* et al. 2571 (BRH<sup>125</sup>), 2608 (BRH<sup>125</sup>).  
Hybridization between *Tectaria incisa* and *Dictyoxiphium panamense* produces the very variable intrageneric hybrid × *Pleuroderris michleriana* (Wagner et al., 1978). It was not recorded for Belize by Moran (1995r: 201, 1995v: 207) though both parental species are present in the area.
- Polypodium dissimile* L., *Syst. nat.* 10th ed., **2**: 1325 (1759)<sup>73: 355</sup>  
Cayo, *B.H. Allen* 15173 (MO<sup>3, 115</sup>); Toledo, *B.K. Holst* 4034 (MO<sup>73, 91, 115</sup>).
- Polypodium dulce* Poir. in Lam., *Encycl.* **5**: 523 (1804)<sup>73: 352</sup>  
Toledo, *F. Boutin & Schlosser* 5022 (MO<sup>73, 115</sup>).
- Polypodium fallax* Schldtl. & Cham. in *Linnaea* **5**: 609 (1830)<sup>73: 361</sup>  
Cayo, *C.L. Lundell* 6216 (MICH<sup>28</sup>, NY); Toledo, *C. Whitefoord* 1745 (BM, NY).
- Polypodium fratrum* Schldtl. & Cham. in *Linnaea* **5**: 608 (1830)<sup>73: 358</sup>  
Cayo, *A. Hughes* 121 (BM-000532009!).
- Polypodium fraxinifolium* Jacq., *Collectanea* **3**: 187 (1791)  
Toledo, *G. Davidse & D.L. Holland* 36729A (MO<sup>115</sup>), *T.E. Hawkins* 1427 (MO<sup>115</sup>), 1429 (MO<sup>115</sup>), *B.K. Holst* et al. 5257 (MO<sup>115</sup>).  
Not listed for Belize in the published version of *Flora Mesoamericana* (Moran, 1995ak: 355), but included in the Internet version on the basis of a collection from Toledo District (*Davidse & Holland* 36729A, MO) made in 1997 and identified by A.R. Smith in January 1998.
- Polypodium hispidulum* Bartlett in *Proc. Amer. Acad. Arts* **43**: 48 (1907)  
Cayo, *T.E. Hawkins* 1078 (MO<sup>115</sup>, UC); Toledo, *T.E. Hawkins* 1330 (MO<sup>115</sup>).  
Not listed for Belize in the published version of *Flora Mesoamericana* (Moran, 1995ak: 358), but included in the Internet version on the basis of a collection from Cayo District (*T.E. Hawkins* 1078, UC) made in 1996 and identified by A.R. Smith in December 1997.
- Polypodium lindenianum* Kunze, *Farmkräuter* **2**: 83 (1849)<sup>73: 362</sup>  
Cayo, *A. Hughes* 131 (BM-000557728!<sup>22</sup>); Toledo, *G. Davidse* et al. 35704 (MO<sup>115</sup>).
- Polypodium polypodioides* (L.) Watt in *Canad. Naturalist & Quart. J. Sci.* ser. 2, **3**: 158 (1867)<sup>73: 363</sup>
- Polypodium polypodioides* var. *aciculare* Weath. in *Contr. Gray Herb.* **124**: 33 (1939)  
Not recorded for Belize in *Flora Mesoamericana*, though present in Chiapas, Guatemala and Honduras and to be expected from Belize. Seymour (1975: 160) cited material of *P. polypodioides* var. *burchellii* (Baker) Weath. from countries of Central America in his treatment of the genus *Polypodium* for Nicaragua, and included reference to ‘British Honduras’ based on material at GH. Moran (1995ak: 364) considered that var. *burchellii* did not occur in Central America, but there is a note describing the confusion between this South American variety and var. *aciculare*. It is evident that Seymour’s concept of var. *burchellii* falls under var. *aciculare* in *Flora Mesoamericana*, though the Belizean material at GH should be located to verify the identity.
- Polypodium polypodioides* var. *polypodioides*<sup>73: 364</sup>  
Belize, *C.L. Lundell* 3884 (K!, NY); Cayo, *J.D. Dwyer & R.L. Liesner* 12092 (MO<sup>73</sup>); Stann Creek, *W.A. Schipp* 349 (BRH<sup>125</sup>, K!, NY); Toledo, *P.H. Gentile* 906 (K!, NY).
- Polypodium triseriale* Sw. in *J. Bot. (Schrader)* **1800**(2): 26 (1801)<sup>73: 357</sup>  
Cayo, *A. Hughes* 117 (BM-000531901!, BM-000557725!<sup>22</sup>); Toledo, *P.H. Gentile* 5014 (MO<sup>73, 115</sup>).
- Pseudocolysis bradeorum* (Rosenst.) L.D. Gómez in *Brenesia* **10**–

**11**: 116 (1977)<sup>74: 365</sup>

Recorded for Belize in *Flora Mesoamericana* (Moran, 1995al: 365) on the basis of the entry in *Flora of Guatemala* (Stolze, 1981: 381) where the distribution explicitly included ‘British Honduras’. Stolze did not cite any material but made reference to Evans & Mickel (1969). Material was cited at GH from ‘British Honduras’ by Seymour (1975: 167), but without detail. This or other material should be sought to verify the distributional record for Belize.

## PSILOACEAE

- Psilotum nudum* (L.) P. Beauv., *Prodr. Aethéogam.*: 106, 112 (1805)<sup>88: 3</sup>  
Belize, *G. Davidse & D.L. Holland* 37046 (MO<sup>115</sup>); Corozal, *G. Davidse & A.E. Brant* 32533 (MO<sup>115</sup>); Stann Creek, *R. Rivero* et al. 2613 (BRH<sup>125</sup>); Toledo, *W.A. Schipp* S-261 (MO<sup>88, 115</sup>).

## PTERIDACEAE

- Acrostichum aureum* L., *Sp. pl.*: 1069 (1753)<sup>41: 105</sup>  
Belize, *M.-H. Sachet & D.R. Stoddart* 1631 (BRH<sup>125</sup>); Stann Creek, *F.R. Fosberg & M.-H. Sachet* 53849 (BRH<sup>125</sup>, MO<sup>41, 115</sup>); Toledo, *D.L. Spellman & D.R. Stoddart* 2299 (BRH<sup>125</sup>).
- Acrostichum danaeifolium* Langsd. & Fisch., *Pl. Voy. Russes monde* **1**: 5, t. 1 (1810)<sup>41: 105</sup>  
Belize, *J.D. Dwyer* 11449 (MO<sup>115</sup>); Toledo, *D.L. Spellman & D.R. Stoddart* 2477 (MO<sup>41, 115</sup>).
- Adiantopsis radiata* (L.) Fée, *Mém. Foug.* **5**: 145 (1852)<sup>86: 106</sup>  
Cayo, *T.B. Croat* 23775 (MO<sup>86, 115</sup>); Toledo, *P.H. Gentile* 6086 (MO<sup>115</sup>).
- Adiantum capillus-veneris* L., *Sp. pl.*: 1096 (1753)<sup>78: 108</sup>  
Toledo, *B.K. Holst* 4014 (MO<sup>78, 91, 115</sup>).
- Adiantum concinnum* Humb. & Bonpl. ex Willd., *Sp. pl.* **5**: 451 (1810)<sup>78: 109</sup>  
Cayo, *A. Hughes* 146 (BM-000528104!<sup>22</sup>, BM-000531933!).
- Adiantum decoratum* Maxon & Weath. in *Amer. J. Bot.* **19**: 165 (1932)<sup>78: 113</sup>  
Toledo, *T.B. Croat* 24179 (MO<sup>78, 115</sup>).
- Adiantum fruticosum* Poepp. ex Spreng., *Syst. veg.* 16th ed., **4**(1): 113 (1827)<sup>78: 114</sup>  
Toledo, *T.B. Croat* 24373 (BRH<sup>125</sup>, MO<sup>78, 115</sup>).
- Adiantum humile* Kunze in *Linnaea* **9**: 80 (1834)<sup>78: 114</sup>  
Toledo, *G. Davidse* 36082 (MO<sup>115</sup>).
- Adiantum latifolium* Lam., *Encycl.* **1**(1): 43 (1783)<sup>78: 114</sup>  
Cayo, *C. Whitefoord* 2096 (BM-000543184!<sup>78, 115</sup>); Orange Walk, *T. Arnason & J. Lambert* 17176 (MO<sup>115</sup>); Stann Creek, *W.A. Schipp* 77 (BM-000543186!, BRH<sup>125</sup>, NY); Toledo, *C. Whitefoord* 1812 (BM-000543188!, MEXU).
- Adiantum macrophyllum* Sw., *Prodr.*: 135 (1788)<sup>78: 112</sup>  
Cayo, *A. Hughes* 14 (BM-000528105!<sup>22</sup>); Stann Creek, *W.A. Schipp* 340 (BM-000543254!, BRH<sup>125</sup>, NY); Toledo, *C. Whitefoord* 1848 (BM-000543190!, MO<sup>78, 115</sup>).
- Adiantum obliquum* Willd., *Sp. pl.* **5**: 429 (1810)<sup>78: 112</sup>  
Belize, *C. Whitefoord* 2366 (BM); Cayo, *A. Hughes* 70 (BM-000528106!<sup>22</sup>, BM-000531796!); Stann Creek, *W.A. Schipp* 275 (BM, BRH<sup>125</sup>, MO<sup>115</sup>, NY); Toledo, *C. Whitefoord* 1521 (BM-000543253!<sup>115</sup>).
- Adiantum petiolatum* Desv. in *Ges. Naturf. Freunde Berlin Mag. Neuesten Entdeck. Gesammten Naturk.* **5**: 326–327 (1811)<sup>78: 112</sup>  
Belize, *C. Whitefoord* 2569 (BM); Cayo, *A. Hughes* 62 (BM-000528100!<sup>22</sup>, BM-000531788!); Stann Creek, *R. Rivero* et al. 2595 (BRH<sup>125</sup>); Toledo, *G.R. Proctor* 36007 (BM-000543194!).
- Adiantum princeps* T. Moore in *Gard. Chron. n.s.*, **4**: 197, f. 43–44 (1875)  
Cayo, *M.J. Balick* et al. 3140 (MO<sup>115</sup>, NY).

- Not recorded for Belize by Moran in *Flora Mesoamericana* (Moran, Zimmer & Jermy 1995: 109), though the specimen listed here was collected in 1991 and identified by J.T. Mickel in 1993.
- Adiantum pulverulentum* L., *Sp. pl.* 2: 1096 (1753)<sup>78: 115</sup>  
Cayo, A. Hughes 56 (BM-000528101!<sup>22</sup>, BM-000531791!); Stann Creek, W.A. Schipp 241 (BM-000543199!, BRH<sup>125</sup>, NY); Toledo, C. Whitefoord 1524 (NY, BM-000543196!).
- Adiantum tenerum* Sw., *Prodr.*: 135 (1788)<sup>78: 110</sup>  
Cayo, D.A. Sutton et al. 3 (BM-000543180!); Orange Walk, M.J. Balick 3219 (BRH<sup>125</sup>, NY); Stann Creek, M.J. Balick 3091 (BRH<sup>125</sup>, NY); Toledo, G. Davidse & A.E. Brant 32302 (MO<sup>78, 115</sup>).
- Adiantum terminatum* Kunze ex Miq. in *Verslagen Meded. Vier Kl. Kon. Inst. Wetensch. Letterk. Schoone Kunsten* 1842: 187 (1843)<sup>78: 116</sup>  
Toledo, G.R. Proctor 35922 (BRH<sup>125</sup>, F<sup>78, 115</sup>).
- Adiantum tetraphyllum* Humb. & Bonpl. ex Willd., *Sp. pl.* 5: 441 (1810)<sup>78: 116</sup>  
Orange Walk, C.L. Lundell 404 (NY); Stann Creek, R. Rivero et al. 2523 (BRH<sup>125</sup>); Toledo, B.K. Holst 4360 (MO<sup>91, 115</sup>).
- Adiantum trapeziforme* L., *Sp. pl.* 2: 1097 (1753)<sup>78: 116</sup>  
Cayo, P.H. Gentile 2342 (F<sup>78, 115</sup>, MO<sup>115</sup>, NY); Toledo, G. Davidse 36198 (MO<sup>115</sup>).
- Adiantum trichochlaenum* Mickel & Beitel in *Mem. New York Bot. Gard.* 46: 29, f. 41L (1988)  
Toledo, B.K. Holst 5873 (MO<sup>115</sup>).  
Jermy did not record this taxon from Belize in the published version of *Flora Mesoamericana* (Moran et al., 1995: 116), but it was included in the Internet version based on a collection made in 1997 from Toledo District and identified by A.R. Smith in the same year.
- Adiantum tricholepis* Fée, *Mém. Foug.* 8: 72 (1857)<sup>78: 110</sup>  
Cayo, M. Brunt 2219 (BM-000543178!); Orange Walk, T. Arnason & J. Lambert 17177 (MO<sup>78, 115</sup>, NY); Toledo, T.E. Hawkins 1676 (MO<sup>115</sup>).
- Adiantum villosum* L., *Syst. nat.* 10th ed., 2: 1328 (1759)<sup>78: 117</sup>  
Cayo, A. Hughes 135 (BM-000528108!<sup>22</sup>, BM-000531916!); Orange Walk, M.J. Balick 3220 (BRH<sup>125</sup>, NY); Toledo, P.H. Gentile 2409 (F<sup>78, 115</sup>, NY).
- Adiantum wilesianum* Hook., *Sp. fil.* 2: 50 (1851)<sup>78: 117</sup>  
Belize, P.H. Gentile 1569 (MO<sup>115</sup>, US); Cayo, A. Hughes 144b (BM-000528109!, BM-000531930!); Stann Creek, W.A. Schipp 48 (BM-000543267!, BRH<sup>125</sup>, US); Toledo, G. Davidse et al. 36450 (BM-000531990, BRH, MO<sup>115</sup>).
- Adiantum wilsonii* Hook., *Sp. fil.* 2: 6 (1851)<sup>78: 113</sup>  
Toledo, C. Whitefoord 1855 (BM-000543176!<sup>178, 115</sup>, NY).
- Cheilanthes microphylla* (Sw.) Sw., *Syn. fil.*: 127 (1806)<sup>131: 127</sup>  
*Cheilanthes microphylla* var. *microphylla*<sup>131: 127</sup>  
Cayo, C.L. Lundell 6542 (MICH<sup>28, 121</sup>, US).
- Cheilanthes notholaenoides* (Desv.) Maxon ex Weath. in *Contr. Gray Herb.* 114: 34 (1936)<sup>131: 128</sup>  
Cayo, A. Hughes 92 (BM-000557720!<sup>22</sup>, BRH, RNG).
- Hemionitis palmata* L., *Sp. pl.*: 1077 (1753)<sup>97: 132</sup>  
Stann Creek, W.A. Schipp 250 (BM-000543336!, BRH<sup>125</sup>, MICH<sup>97</sup>, MO<sup>115</sup>); Toledo, C. Whitefoord 1904 (BM-000543266!).
- Pityrogramma calomelanos* (L.) Link, *Handbuch* 3: 20 (1833)<sup>42: 138</sup>  
*Pityrogramma calomelanos* var. *calomelanos*<sup>42: 138</sup>  
Belize, P.H. Gentile 1548 (K, NY); Cayo, T.B. Croat 24862 (MO<sup>42, 115</sup>); Stann Creek, P.H. Gentile 8372 (BM-000543264!, NY); Toledo, B.K. Holst et al. 35596 (MO<sup>115</sup>).
- Pteris altissima* Poir. in Lam., *Encycl.* 5: 722 (1804)<sup>43: 141</sup>  
Cayo, A. Hughes 72 (BM-000531762!<sup>22</sup>, BM-000531800!, BM-000531801!); Stann Creek, J. Robertson 231 (BM-000543191!); Toledo, T.B. Croat 23808 (MO<sup>43, 115</sup>).
- Pteris biaurita* L., *Sp. pl.*: 1076 (1753)<sup>43: 141</sup>  
Cayo, A. Hughes 114 (BM-000531903!, BM-000557721!<sup>22</sup>); Toledo, P.H. Gentile 2376 (US).
- Pteris grandifolia* L., *Sp. pl.* 2: 1073 (1753)<sup>43: 141</sup>  
Cayo, A. Hughes 37 (BM-000531758!<sup>22</sup>, BM-000531856!, BM-000531857!); Orange Walk, C. Whitefoord 8169 (BM-000543166!); Toledo, P.H. Gentile 1523 (K).
- Pteris longifolia* L., *Sp. pl.*: 1074 (1753)<sup>43: 142</sup>  
Cayo, A. Hughes 81 (BM-000557714!<sup>22</sup>); Orange Walk, C. Whitefoord 8168 (BM-000543171!); Stann Creek, W.A. Schipp 428 (BM-000543173!, BRH<sup>125</sup>); Toledo, J.D. Dwyer et al. 261 (MO<sup>43, 115</sup>).
- Pteris propinqua* J. Agardh, *Recens. spec. Pter.*: 65 (1839)  
Toledo, D.L. Holland 14A (MO<sup>115</sup>, UC).  
Not included for Belize in the published version of *Flora Mesoamericana* (Moran, 1995g: 143) but included in the Internet version based on a collection from Toledo District (D.L. Holland 14A, UC) made in 1997 and determined by A.R. Smith.
- Pteris pungens* Willd., *Sp. pl.* 5: 387 (1810)<sup>43: 144</sup>  
Cayo, D.R. Hunt 607 (BM-000543170!); Stann Creek, W.A. Schipp 289 (BM-000543167!, BRH<sup>125</sup>); Toledo, C. Whitefoord 1849 (BM-000543169!).
- Pteris quadriaurita* Retz., *Observ. bot.* 6: 38 (1791)<sup>43: 144</sup>  
Toledo, B.K. Holst 3900 (MO<sup>43, 91, 115</sup>).

## SALVINIACEAE

- Salvinia auriculata* Aubl., *Hist. pl. Guiane* 2: 969 (1775)<sup>75: 396</sup>  
Orange Walk, G. Davidse & A.E. Brant 32892 (MO<sup>75, 115</sup>).
- Salvinia minima* Baker in *J. Bot.* 24: 98 (1886)<sup>75: 396</sup>  
Belize, G. Davidse & A.E. Brant 33130 (MO<sup>115</sup>); Toledo, C. Whitefoord 2145 (BM, MO<sup>75, 115</sup>).

## SCHIZAEACEAE

- Actinostachys germanii* Fée, *Mém. Foug.* 11: 123 (1866)<sup>102: 52</sup>  
Toledo, M.E. Peck 936 (GH<sup>120</sup>).
- Anemia adiantifolia* (L.) Sw., *Syn. fil.*: 157 (1806)<sup>76: 53</sup>  
Belize, P.H. Gentile 1316 (K!, MO<sup>76, 115</sup>); Cayo, A. Hughes 83 (BM-000557706!<sup>22</sup>); Toledo, G. Davidse & A.E. Brant 32322 (MO<sup>115</sup>).
- Anemia bartlettii* Mickel in *Iowa State J. Sci.* 36: 420 (1962)<sup>76: 54</sup>  
Cayo, H.H. Bartlett 11898 (MICH-holotype<sup>76, 115</sup>, MICH-isotype, UC, US), D.R. Hunt 428 (BM, BRH, UCWI, US<sup>120</sup>), J.R. Wiley 402 (MO<sup>76, 115</sup>).
- One of very few Belizean endemic taxa, this locally distributed fern from the Mountain Pine Ridge area in Cayo District was first collected in 1931. It was identified as *A. flexuosa* by Maxon (1944a: 17) and distributed under that name, but not recognized as a new species until 1962. The specimen cited in the distributional statement in *Flora Mesoamericana* (Moran & Mickel, 1995: 54) as 'B (Wiley 4402, MO)' is incorrect as the collections made by J.R. Wiley in August 1970 were less than 500 numbers and another record on TROPICOS correctly lists this as 402.
- Anemia hirta* (L.) Sw., *Syn. fil.*: 155 (1806)<sup>76: 54</sup>  
Cayo, D.A. Sutton et al. 4 (BM-000543239!).
- Anemia mexicana* Klotzsch in *Limnaea* 18: 526 (1844)<sup>76: 55</sup>  
*Anemia mexicana* var. *makrinii* (Maxon) Mickel in *Brittonia* 33: 421 (1981)<sup>76: 55</sup>  
Cayo, A. Hughes 99 (BM-000531834!, BM-000557705!<sup>22</sup>); Toledo, G. Davidse & A.E. Brant 32127 (MO<sup>76, 115</sup>).
- Described originally from Mexico, this taxon has only been recorded from Belize for the *Flora Mesoamericana* area (Moran & Mickel, 1995: 55).

- Anemia oblongifolia* (Cav.) Sw., *Syn. fil.*: 156 (1806)<sup>76:55</sup>  
Cayo, J.N. Hedger 319 (BM-000543241!); Toledo, J.R. Wiley 351 (MO<sup>76,115</sup>).
- Anemia pastinacaria* Moritz ex Prantl, *Unters. Morph. Gefässkrypt.* 2: 110 (1881)<sup>76:55</sup>  
Cayo, T.E. Hawkins 1031 (MO<sup>115</sup>); Stann Creek, W.A. Schipp 366 (K!, MO<sup>76,115</sup>, NY).
- Anemia speciosa* C. Presl, *Suppl. tent. pterid.*: 89 (1846)<sup>76:56</sup>  
Cayo, C.L. Lundell 6906 (MICH<sup>28</sup>, MO<sup>76,115</sup>, NY); Toledo, B.K. Holst et al. 35855 (MO<sup>115</sup>).
- Lygodium heterodoxum* Kunze, *Farnkräuter* 2: 32 (1849)<sup>37:56</sup>  
Cayo, A. Hughes 55 (BM-000531763!<sup>22</sup>); Toledo, G. Davidse 36891 (BM-000531988!, MO<sup>115</sup>).
- Lygodium venustum* Sw. in *J. Bot.* 1801(2): 303 (1803)<sup>37:57</sup>  
Belize, F.P. Barlee s.n. (K!); Cayo, A. Hughes 16 (BM-000531764!<sup>22</sup>, BM-000531880!); Corozal, M.J. Balick et al. 2190 (MO<sup>115</sup>); Orange Walk, C. Whitefoord 8054 (BM-000543272!, F); Stann Creek, G.R. Proctor 36566 (MO<sup>115</sup>); Toledo, W.A. Schipp 328 (MO<sup>76,115</sup>).
- Lygodium volubile* Sw. in *J. Bot.* 1801(2): 304 (1803)<sup>37:57</sup>  
Cayo, C.L. Lundell 6613 (MICH<sup>28</sup>, NY); Stann Creek, D.R. Hunt 355 (BM-000543271!); Toledo, B.K. Holst et al. 35597 (MO<sup>115</sup>).
- Schizaea elegans* (Vahl) Sm. in *Mém. Acad. Roy. Sci. (Turin)* 5(1790–1791): 419 (1793)<sup>103:57</sup>  
Stann Creek, P.H. Gentle 3487 (MEXU<sup>103,115</sup>, NY, US); Toledo, E.J.F. Campbell 10 (K!).
- Schizaea poeppigiana* J.W. Sturm in Mart., *Fl. bras.* 1(2): 181 (1859)<sup>103:57</sup>  
Toledo, G. Davidse & A.E. Brant 32268 (MO<sup>103,115</sup>).

## SELAGINELLACEAE

- Selaginella apoda* (L.) Spring in Mart., *Fl. bras.* 1(2): 119 (1840), as 'Selaginella apus'  
Toledo, C. Whitefoord 3300 (BM-000543202!).  
Not recorded for Belize by Fraile in *Flora Mesoamericana* (Fraile et al., 1995: 29) but present in Chiapas and Guatemala. The specimen listed here was identified by Fraile in 1987 yet not included in the flora; further investigation is required.
- Selaginella cladorrhizans* A. Braun in *Ann. Sci. Nat., Bot. sér. 5, 3*: 282 (1865)<sup>17:30</sup>  
Cayo, H.H. Bartlett 11457 (BM<sup>17,115</sup>); Toledo, C. Whitefoord 8359 (BM-000543203!).
- Selaginella diffusa* (C. Presl) Spring in *Bull. Acad. Roy. Sci. Bruxelles* 10: 143 (1843)<sup>17:26</sup>  
Cayo, B.H. Allen 15208 (BM-000543206!, MO<sup>3,17,115</sup>).
- Selaginella eurynota* A. Braun in *Ann. Sci. Nat., Bot. sér. 5, 3*: 293 (1865)  
Toledo, G. Davidse 35970 (MO<sup>115</sup>), G.R. Proctor 36009 (BM-000543200!).  
This Central American endemic was not recorded by Fraile for Belize in *Flora Mesoamericana* (Fraile et al., 1995: 26) but material was collected under this name in 1976 (G.R. Proctor 36009, BM!) and a subsequent collection in 1996 (Davidse 35970, MO) was determined as this taxon by A.R. Smith in 1997.
- Selaginella flagellata* Spring in *Bull. Acad. Roy. Sci. Bruxelles* 10: 228 (1843)  
Toledo, B.K. Holst et al. 5522 (MO<sup>115</sup>).  
Fraile (Fraile et al., 1995: 32) did not record this taxon for Belize in *Flora Mesoamericana*, though it was listed from Chiapas and Guatemala. It is included here on the basis of a specimen collected from Toledo District in 1997 and determined by A.R. Smith in the same year.

- Selaginella guatemalensis* Baker in *J. Bot.* 21: 243 (1883)<sup>17:33</sup>  
Toledo, C. Whitefoord 1664 (BM-000543249!<sup>17,115</sup>, NY).
- Selaginella harrisii* Underw. & Hieron. in *Urb., Symb. antill.* 7: 162 (1912)<sup>17:33</sup>  
Fraile (Fraile et al., 1995: 33) did not cite a specimen from Belize but referred to extralimital distribution in the *Pteridophyte flora of Oaxaca* (Mickel & Beitel, 1988: 341). Specimens need to be located to confirm the record.
- Selaginella hoffmannii* Hieron. in *Hedwigia* 41: 41 (1902)<sup>17:33</sup>  
Cayo, C. Whitefoord 2059 (BM-000543204!).
- Selaginella huehuetenangensis* Hieron. in *Hedwigia* 43: 32 (1904)<sup>17:34</sup>  
Belize, C. Whitefoord 2492 (BM-000543152!); Cayo, H.H. Bartlett 13032 (BM-000543154!); Toledo, M.E. Peck 634 (BM-000543155!).
- Selaginella idiospora* Alston in *Bull. Brit. Mus. (Nat. Hist.), Bot.* 1: 246, t. 6 (1955)<sup>17:34</sup>  
Cayo, C. Whitefoord 1253 (BM-000543207!<sup>17,115</sup>); Toledo, G. Davidse 36100 (MO<sup>115</sup>).
- Selaginella microdendron* Baker in *J. Bot.* 23: 116 (1885)<sup>17:35</sup>  
Stann Creek, W.A. Schipp 99 (BM-000543205!<sup>17,115</sup>); Toledo, J.R. Wiley 356 (MO<sup>115</sup>).
- Selaginella mollis* A. Braun in *Ann. Sci. Nat., Bot. sér. 5, 3*: 276 (1865)<sup>17:36</sup>  
Belize, C. Whitefoord 2765 (BM-000543201!); Toledo, W.A. Schipp 925 (NY).
- Selaginella ovifolia* Baker in *J. Bot.* 22: 90 (1884)<sup>17:37</sup>  
Toledo, W.A. Schipp 924[a] (BM<sup>17,115</sup>).
- Selaginella pallescens* (C. Presl) Spring in Mart., *Fl. bras.* 1(2): 132 (1840)<sup>17:37</sup>
- Selaginella pallescens* var. *acutifolia* Stolze in *Amer. Fern J.* 71: 51 (1981)<sup>17:37</sup>  
Cayo, C. Whitefoord 1255 (BM-000543211!<sup>17,115</sup>).
- Selaginella pallescens* var. *pallescens*<sup>17:37</sup>  
Belize, T.B. Croat 23835 (NY); Cayo, C. Whitefoord 1941 (BM-000543212!<sup>17,115</sup>); Toledo, B.K. Holst 3881 (MO<sup>91,115</sup>).
- Selaginella sertata* Spring in *Mém. Acad. Roy. Soc. Belgique* 24: 104 (1849)<sup>17:28</sup>  
Belize, P.H. Gentle 1396 (BM<sup>17</sup>, NY); Cayo, C. Whitefoord 1091 (BM-000543209!); Orange Walk, C.L. Lundell 394 (NY); Toledo, B.K. Holst 4341 (MO<sup>91,115</sup>).
- Selaginella silvestris* Aspl in *Ark. Bot.* 20A(7): 30, f. 3–5 (1926)  
Cayo, G.R. Proctor 30105 (BM-000543226!); Toledo, C. Whitefoord 1983 (BM-000543213!, NY).  
Not recorded for Belize by Somers and Moran in the published version of *Flora Mesoamericana* (Fraile et al., 1995: 28), though many specimens have been collected recently from Toledo District and material from as early as 1969 (G.R. Proctor 30105, BM!) is known from the country.
- Selaginella stellata* Spring in *Flora* 21: 194 (1838)<sup>17:28</sup>  
Stann Creek, W.A. Schipp 52 (BM-000543224!, MO<sup>17</sup>, NY); Toledo, C. Whitefoord 1776 (BM-000543223!).
- Selaginella umbrosa* Lem. ex Hieron. in Engler & Prantl, *Nat. Pflanzenfam.* 1(4): 683, f. 404 (1901)<sup>17:41</sup>  
Belize, P.H. Gentle 1552 (K, NY); Cayo, D.J. Lewis 43 (BM-000543221!); Orange Walk, C.L. Lundell 395 (NY); Stann Creek, W.A. Schipp 51 (BM-000543216!, NY); Toledo, C. Whitefoord 1851 (BM, MEXU<sup>17</sup>, NY).

## TECTARIACEAE

- Ctenitis equestris* (Kunze) Ching in *Sunyatsenia* 5(4): 250 (1940)<sup>54:197</sup>  
*Ctenitis equestris* var. *equestris*<sup>54:197</sup>

- Stann Creek, W.A. Schipp 276 (BM-000543331!, BM-000543332!, BRH<sup>125</sup>, MO<sup>54, 115</sup>).
- Ctenitis excelsa* (Desv.) Proctor in *Rhodora* **63**: 34 (1961)<sup>54: 198</sup>  
Cayo, J.D. Dwyer 11200 (MO<sup>54, 115</sup>); Toledo, G. Davidse 36202 (MO<sup>115</sup>).
- Ctenitis interjecta* (C. Chr.) Ching in *Sunyatsenia* **5**(4): 250 (1940)<sup>54: 198</sup>  
Toledo, T.B. Croat 24223 (MO<sup>54, 115</sup>).
- Ctenitis melanosticta* (Kunze) Copel., *Gen. fil. (Ann. Cryptog. Phytopathol. 5)*: 124 (1947)<sup>54: 199</sup>  
Cayo, T.B. Croat 23320 (MO<sup>54, 115</sup>); Toledo, B.K. Holst et al. 35883 (MO<sup>115</sup>).
- Ctenitis nigrovenia* (H. Christ) Copel., *Gen. fil. (Ann. Cryptog. Phytopathol. 5)*: 124 (1947)<sup>54: 199</sup>  
Cayo, D.A. Sutton et al. 7 (BM-000543335!, MO<sup>54, 115</sup>).
- Ctenitis salvinii* (Baker) Stolze in *Amer. Fern J.* **67**: 43 (1977)<sup>54: 199</sup>  
Toledo, B.K. Holst 3890 (MO<sup>91, 115</sup>), W.A. Schipp S-773 (GH<sup>54, 115</sup>).
- Cyclopeltis semicordata* (Sw.) Sm. in *Bot. Mag.* **72**(Companion): 36 (1846)<sup>55: 200</sup>  
Orange Walk, M.J. Balick 3222 (BRH<sup>125</sup>, NY); Toledo, J.D. Dwyer 9921 (MO<sup>55, 115</sup>).
- Dictyoxiphium panamense* Hook., *Gen. fil.*: 62 (1840)<sup>56: 201</sup>  
Stann Creek, W.A. Schipp 228 (BRH<sup>125</sup>, NY); Toledo, G. Davidse & A.E. Brant 32211 (MO<sup>56, 115</sup>).
- Lastreopsis effusa* (Sw.) Tindale in *Victoria Naturalist* **73**: 184 (1957)<sup>57: 201</sup>
- Lastreopsis effusa* subsp. *divergens* (Willd. ex Schkuhr) Tindale in *Contr. New South Wales Natl. Herb.* **3**: 299, t. 21 (1965)<sup>57: 201</sup>  
Cayo, A. Hughes 133 (BM-000557727!<sup>22</sup>); Toledo, T.B. Croat 24463 (MO<sup>57, 115</sup>).
- Lastreopsis exculata* (Mett.) Tindale in *Victoria Naturalist* **73**: 185 (1957)
- Lastreopsis exculata* subsp. *exculata*  
Toledo, G. Davidse 35648 (MO<sup>115</sup>), G. Davidse 35799 (MO<sup>115</sup>), G. Davidse 36208 (MO<sup>115</sup>).
- Recorded from Chiapas, Honduras and Guatemala in *Flora Mesoamericana* (Moran, 1995a: 202), but not from Belize. Included here on the basis of material collected from Toledo District and identified as *L. exculata* (Mett.) Tindale by A.R. Smith in 1997. Further material from Belize was identified as *L. exculata* subsp. *guatemalensis* (Baker) Tindale, though this name is included as a synonym of subsp. *exculata* by Moran.
- Megalastrum lunense* (H. Christ) A.R. Sm. & R.C. Moran in *Amer. Fern J.* **77**: 128 (1987)  
Toledo, B.K. Holst 5820 (MO<sup>115</sup>, UC).
- This Central American endemic was not recorded for Belize in the published version of *Flora Mesoamericana* (Smith & Moran, 1995a: 203), but included in the Internet version on the basis of a collection from Toledo District (B.K. Holst 5820, UC) made in February 1997 and identified by A.R. Smith later the same year. This is the first record of the genus from Belize.
- Tectaria heracleifolia* (Willd.) Underw. in *Bull. Torrey Bot. Club* **33**: 200 (1906)<sup>58: 207</sup>
- Tectaria heracleifolia* var. *heracleifolia*<sup>58: 207</sup>  
Belize, C. Whitefoord 1163 (BM-000543323!); Cayo, C. Whitefoord 2034 (BM, MO<sup>58, 115</sup>); Orange Walk, C.L. Lundell 338 (NY); Toledo, G. Davidse & D.L. Holland 36495 (BM-000531986!, MO<sup>115</sup>).
- Tectaria incisa* Cav., *Descr. pl.*: 249 (1802)<sup>58: 207</sup>  
Cayo, D.L. Spellman & W.W. Newey 1849 (MO<sup>58, 115</sup>); Stann Creek, W.A. Schipp 272 (BM-000543315!, BRH<sup>125</sup>, NY); Toledo, C. Whitefoord 1583 (BM-000543316!).
- Tectaria mexicana* (Fée) C.V. Morton in *Amer. Fern J.* **56**: 133 (1966)<sup>58: 207</sup>  
Belize, P.H. Gentle 1551 (K, NY); Cayo, A. Hughes 51 (BM-000531775!<sup>22</sup>, BM-000531780!); Toledo, G. Davidse & A.E. Brant 32371 (MO<sup>58, 115</sup>).
- Tectaria nicotianifolia* (Baker) C. Chr., *Index filic., Suppl.* **3**: 182 (1934)  
Toledo, G. Davidse & D.L. Holland 36603 (UC<sup>115</sup>).
- Not recorded for Belize in *Flora Mesoamericana* (Moran, 1995v: 208), but present in Guatemala, Honduras and from Nicaragua to Panama. Included in the Internet version based on the specimen from Toledo District listed above collected in 1997 and determined by A.R. Smith.
- Tectaria pilosa* (Fée) R.C. Moran in *Novon* **2**: 138 (1992)  
Toledo, G.R. Proctor 36155 (BM-000543314!).
- Only recorded for Costa Rica and Panama in *Flora Mesoamericana* (Moran, 1995v: 208), *T. pilosa* is listed here based on a collection from high forest in the Columbia Forest Reserve of Toledo, originally identified as *T. incisa* var. *pilosa* by G.R. Proctor. It differs from *T. heracleifolia* in the oblique or decurrent base to the terminal segment of the lamina and rather sparsely pilose upper and lower faces. Further investigation of this material is required.
- Tectaria plantaginea* (Jacq.) Maxon in *Contr. U.S. Natl. Herb.* **10**: 494 (1908)<sup>58: 208</sup>  
Stann Creek, W.A. Schipp 465 (BRH<sup>125</sup>, MO<sup>58, 115</sup>, NY).
- Tectaria rivalis* (Mett. ex Kuhn) C. Chr., *Index filic., Suppl.* **3**: 184 (1934)<sup>58: 208</sup>  
Cayo, T.E. Hawkins 1273 (MO<sup>115</sup>); Stann Creek, W.A. Schipp S-66 (BM-000543327!, F<sup>58, 115</sup>, NY).
- Tectaria vivipara* Jermy & T.G. Walker in *Bull. Brit. Mus. (Nat. Hist.), Bot.* **13**: 274, f. 15 (1985)<sup>58: 209</sup>  
Belize, P.H. Gentle 1542 (K, MO<sup>58, 115</sup>, NY); Toledo, C. Whitefoord 1583 (BM, NY).

## THELYPTERIDACEAE

- Macrothelypteris torresiana* (Gaud.) Ching in *Acta Phytotax. Sin.* **8**: 310 (1963)  
Cayo, A. Hughes 143 (BM-000531924!, BM-000557726!<sup>22</sup>); Toledo, G. Davidse 35918 (MO<sup>115</sup>).
- Not recorded for Belize in *Flora Mesoamericana* (Smith, 1995a: 164). The species and genus were first listed for Belize by Hughes (1998) for the Chiquibul Forest Reserve and additional material is cited in TROPICOS based on identifications by A.R. Smith in 1997 and 1999.
- Thelypteris balbisii* (Spreng.) Ching in *Bull. Fan. Mem. Inst. Biol., Bot.* **10**: 250 (1941)<sup>110: 170</sup>  
Stann Creek, P.H. Gentle 2720 (NY); Toledo, A.H. Gentry 7900 (UC<sup>110</sup>).
- Thelypteris biolleyi* (H. Christ) Proctor in *Bull. Inst. Jamaica, Sci. Ser.* **5**: 58 (1953)<sup>110: 183</sup>  
Toledo, G. Davidse & A.E. Brant 32208 (MO<sup>115</sup>, UC<sup>110, 115</sup>).
- Thelypteris blanda* (Fée) C.F. Reed in *Phytologia* **17**: 264 (1968)<sup>110: 183</sup>  
Cayo, A. Hughes 113 (BM-000531751!<sup>22</sup>); Toledo, M.E. Peck s.n. (US<sup>110, 115</sup>).
- Thelypteris decussata* (L.) Proctor in *Bull. Inst. Jamaica, Sci. Ser.* **5**: 59 (1953)
- Thelypteris decussata* var. *costaricensis* A.R. Sm. in *Univ. Calif. Publ. Bot.* **76**: 16 (1980)  
Toledo, B.K. Holst 5919 (MO<sup>115</sup>).
- This Central American endemic was not recorded for Belize in

- the published version of *Flora Mesoamericana* (Smith, 1995b: 194), but was recorded from Honduras, Costa Rica and Panama. Belize was included in the Internet version based on a specimen collected from Toledo District listed here and identified by A.R. Smith in 1997. A second specimen (*Holst* 5819, MO), identified by A.R. Smith as *T. decussata* (L.) Proctor, may also be referable to var. *costaricensis*.
- Thelypteris dentata*** (Forssk.) E.P. St. John in *Amer. Fern J.* **26**: 44 (1936)<sup>110: 181</sup>  
Toledo, *G. Davidse* 36886 (MO<sup>115</sup>), *R. Rivero* 2539 (UC).  
Not recorded for Belize in the published version of *Flora Mesoamericana* (Smith, 1995b: 181) but included in the Internet version based on a collection (*Rivero* et al. 2539, UC) identified by A.R. Smith in March 1996.
- Thelypteris falcata*** (Liebm.) R.M. Tryon in *Rhodora* **69**: 6 (1967)<sup>110: 192</sup>  
Stann Creek, *W.A. Schipp* 97 (BRH<sup>125</sup>, NY); Toledo, *P.H. Gentle* 8693 (NY, UC<sup>110</sup>).
- Thelypteris ghiesbreghtii*** (Hook.) C.V. Morton in *Contr. U.S. Natl. Herb.* **38**: 45 (1967)<sup>110: 186</sup>  
Toledo, *W.A. Schipp* S-935 (GH<sup>110</sup>, NY).
- Thelypteris glandulosa*** (Desv.) Proctor in *Rhodora* **61**: 306 (1960)<sup>110: 194</sup>  
*Thelypteris glandulosa* var. *brachyodus* (Kunze) A.R. Sm. in *Phytologia* **34**: 233 (1976)<sup>110: 194</sup>  
Toledo, *W.A. Schipp* 362 (NY, UC<sup>110, 115</sup>).
- Thelypteris hispidula*** (Decne) C.F. Reed in *Phytologia* **17**: 283 (1968)<sup>110: 181</sup>  
Belize, *P.H. Gentle* 1460 (K!); Cayo, *A. Hughes* 88 (BM-000531822!, BM-000531828!, BM-000531829!, BM-000557715!<sup>122</sup>); Toledo, *A.H. Gentry* 7978 (MO<sup>110, 115</sup>, NY).
- Thelypteris hondurensis*** L.D. Gómez in *Phytologia* **50**: 458 (1982)<sup>110: 186</sup>  
Toledo, *W.B. Crankshaw* s.n. (CR<sup>110, 115</sup>, NY).
- Thelypteris kunthii*** (Desv.) C.V. Morton in *Contr. U.S. Natl. Herb.* **38**: 53 (1967)<sup>110: 182</sup>  
Belize, *T.B. Croat* 23987 (UC<sup>110, 115</sup>); Cayo, *A. Hughes* 50a (BM-000531750!<sup>122</sup>, BM-000531773!); Toledo, *B.K. Holst* 6020 (MO<sup>115</sup>).
- Thelypteris leprieurii*** (Hook.) R.M. Tryon in *Rhodora* **69**: 6 (1967)
- Thelypteris leprieurii*** var. *subcostalis* A.R. Sm. in *Univ. Calif. Publ. Bot.* **76**: 26 (1980)  
Toledo, *G. Davidse & D.L. Holland* 36788 (MO<sup>115</sup>), *T.E. Hawkins* 1536 (MO<sup>115</sup>).  
Not recorded for Belize in the published version of *Flora Mesoamericana* (Smith, 1995b: 194), but included in the Internet version based on a subsequent collection from Toledo District (*G. Davidse & D.L. Holland* 36788, MO) identified by A.R. Smith in January 1998.
- Thelypteris linkiana*** (C. Presl) R.M. Tryon in *Rhodora* **69**: 6 (1967)  
Toledo, *D.L. Holland* 29 (MO<sup>115</sup>, UC).  
Not recorded for Belize in the published version of *Flora Mesoamericana* (Smith, 1995b: 174), but included in the Internet version based on a specimen collected subsequently from Toledo District (*D.L. Holland* 29, UC) and identified by A.R. Smith in December 1997.
- Thelypteris meniscioides*** (Liebm.) C.F. Reed in *Phytologia* **17**: 292 (1968)  
Toledo, *C. Whitefoord* 1518 (BM).  
Not recorded for Belize in *Flora Mesoamericana* (Smith, 1995b: 186–187) though both *T. meniscioides* var. *meniscioides* (with a pinnate lamina) and the Guatemalan endemic *T. meniscioides* var. *ternata* A.R. Sm. (with a ternate lamina) are known from Guatemala.
- Thelypteris nicaraguensis*** (E. Fourn.) C.V. Morton in *Contr. U.S. Natl. Herb.* **38**: 55 (1967)  
Toledo, *B.K. Holst* 4324 (MO<sup>91, 115</sup>).  
This Central American endemic was not recorded from Belize in *Flora Mesoamericana* (Smith, 1995b: 187) although it was listed for Chiapas and Honduras. The material listed here, collected in 1992, was identified by R.C. Moran under this name and cited by Parker et al. (1993: 41). The identity of this material requires confirmation.
- Thelypteris obliterated*** (Sw.) Proctor in *Bull. Inst. Jamaica, Sci. Ser.* **5**: 62 (1953)<sup>110: 187</sup>  
Stann Creek, *W.A. Schipp* 83 (BRH<sup>125</sup>, NY); Toledo, *P.H. Gentle* 1458 (K, UC<sup>110, 115</sup>).
- Thelypteris ovata*** R.P. St. John in *Small, Ferns s.e. states*: 230 (1930)<sup>110: 182</sup>
- Thelypteris ovata*** var. *lindheimeri* (C. Chr.) A.R. Sm. in *Amer. Fern J.* **61**: 30 (1971)<sup>110: 182</sup>  
Cayo, *P.H. Gentle* 2323 (GH<sup>110, 115</sup>, K!, NY).
- Thelypteris patens*** (Sw.) Small, *Ferns s.e. states*: 243 (1938)<sup>110: 182</sup>  
***Thelypteris patens*** var. *patens*<sup>110: 182</sup>  
Cayo, *A. Hughes* 36a (BM-000531757!<sup>122</sup>, BM-000531850!); Toledo, *T.B. Croat* 24272 (UC<sup>110, 115</sup>).
- Thelypteris patens*** var. *smithiana* Ponce in *Darwiniana* **28**: 373 (1987)  
Cayo, *A. Hughes* 85 (BM-000532010!).  
Central American material formerly identified as var. *scabriuscula* (C. Presl) A.R. Sm. was referred to var. *smithiana* by Smith (1995b: 182) on the basis of a study by Ponce (1987) who asserted that the type of var. *scabriuscula* was equivalent to *T. patens* var. *patens*. Material from Cayo District collected and identified as var. *scabriuscula* is included here in var. *smithiana*.
- Thelypteris paucipinnata*** (Donn. Sm.) C.F. Reed in *Phytologia* **17**: 302 (1968)<sup>110: 188</sup>  
Cayo, *A. Hughes* 112 (BM-000531896!, BM-000531897!, BM-000557704!<sup>122</sup>); Toledo, *P.H. Gentle* 6550 (US<sup>110</sup>).
- Thelypteris poiteana*** (Bory) Proctor in *Bull. Inst. Jamaica, Sci. Ser.* **5**: 63 (1953)<sup>110: 188</sup>  
Cayo, *P.H. Gentle* 1457 (K, US<sup>110, 115</sup>); Orange Walk, *C.L. Lundell* 406 (US); Toledo, *C. Whitefoord* 1640 (BM).
- Thelypteris praetermissa*** (Maxon) A.R. Sm. in *Phytologia* **34**: 232 (1976)<sup>110: 188</sup>  
Belize, *P.H. Gentle* 9720 (US); Cayo, *H.H. Bartlett* 13104 (MICH<sup>29, 110, 115</sup>, US- photograph<sup>110, 115</sup>); Stann Creek, *T.B. Croat* 24548 (UC<sup>110, 115</sup>); Toledo, *G. Davidse & M. Meadows* 35842 (MO<sup>115</sup>).  
Based on a Belizean type (*Bartlett* 13104, MICH), *T. praetermissa* forms putative hybrids with *T. obliterated* and several specimens from Belize are interpreted as of hybrid origin by Smith (1995b: 188). Amongst several paratypes listed by Maxon (1944a: 20) is another Belizean specimen from close to the type locality (*H.H. Bartlett* 11878, MICH), yet Smith interpreted a duplicate at US as a hybrid.
- Thelypteris reptans*** (J.F. Gmel.) C.V. Morton in *Fieldiana, Bot.* **28**: 12 (1951)<sup>110: 189</sup>  
Cayo, *T.B. Croat* 23489 (UC<sup>110, 115</sup>); Toledo, *B.K. Holst* et al. 5496 (MO<sup>115</sup>).
- Thelypteris resinifera*** (Desv.) Proctor in *Bull. Inst. Jamaica, Sci. Ser.* **5**: 63 (1953)<sup>110: 177</sup>  
Cayo, *D.R. Hunt* 255 (US<sup>110, 115</sup>); Stann Creek, *P.H. Gentle* 2759 (US); Toledo, *G. Davidse & A.E. Brant* 31881 (MO<sup>115</sup>).
- Thelypteris sancta*** (L.) Ching in *Bull. Fan. Mem. Inst. Biol., Bot.* **10**: 254 (1941)  
Toledo, *B.K. Holst* 5968 (MO<sup>115</sup>), *C. Whitefoord* 1697 (BM).

Not recorded for Belize in the published version of *Flora Mesoamericana* (Smith, 1995b: 178), though included in the Internet version based on a specimen collected by Holst in 1997 and determined by A.R. Smith in the same year.

*Thelypteris schippii* (Weath.) A.R. Sm. in *Phytologia* **34**: 233 (1976)<sup>110: 189</sup>

Toledo, W.A. Schipp S-782 (GH<sup>108, 110, 115, 129</sup>).

Endemic to Toledo District in Belize; the holotype at GH is incorrectly cited by Weatherby (1935: 52) and Smith (1981b: 505) as 'Schipp 8-782' which is a common error for Schipp specimens prefixed by 'S-'. The correct citation is 'S-782' as amended by Smith (1995b: 189).

*Thelypteris skinneri* (Hook.) C.F. Reed in *Phytologia* **17**: 314 (1968)<sup>110: 189</sup>

Toledo, W.A. Schipp S-797 (GH<sup>110, 115</sup>).

*Thelypteris struthiopteroides* (C. Chr.) C.F. Reed in *Phytologia* **17**: 316 (1968)

Stann Creek, W.A. Schipp 926 (BRH<sup>125</sup>).

Not recorded for Belize in *Flora Mesoamericana* (Smith, 1995b: 178), though known from Oaxaca to Guatemala and tentatively included here on the basis of a record in Vargas & Shawe (1997: 48). Further investigation of the Schipp material at BRH or other duplicates is required to confirm the record.

*Thelypteris tetragona* (Sw.) Small, *Ferns s.e. states*: 256 (1938)<sup>110: 189</sup>

Cayo, P.H. Gentle 9021 (US<sup>108, 110, 115</sup>); Stann Creek, R. Rivero et al. 2530 (BRH<sup>125</sup>); Toledo, G. Davidse 35647 (MO<sup>115</sup>).

*Thelypteris toganetra* A.R. Sm. in *Amer. Fern J.* **63**: 118 (1973)<sup>110: 190</sup>

Toledo, B.D. Vanderveen 587 (UC<sup>110, 115</sup>).

## VITTARIACEAE

*Ananthacorus angustifolius* (Sw.) Underw. & Maxon in *Contr. Gray Herb.* **10**: 487 (1908)<sup>46: 148</sup>

Cayo, A. Hughes 124 (BM<sup>1</sup>, BM-000557722<sup>122</sup>); Toledo, T.B. Croat 24380 (MO<sup>46, 115</sup>).

As *Vittaria costata* Kunze in *Flora Mesoamericana* (Moran, 1995j: 148), but treated here as a species of *Ananthacorus* following the recent revision by Crane (1997).

*Anetium citrifolium* (L.) Splitg. in *Tijdschr. Natuurl. Gesch. Physiol.* **7**: 395 (1840)<sup>44: 145</sup>

Toledo, B.K. Holst 5940 (MO<sup>115</sup>).

*Hecistopteris pumila* (Spreng.) J. Sm. in *London J. Bot.* **1**: 193 (1842)<sup>45: 148</sup>

Stann Creek, W.A. Schipp S-50 (US).

*Polytaenium cajenense* (Desv.) Benedict in *Bull. Torrey Bot. Club* **38**: 169 (1911)<sup>45: 146</sup>

As *Antrophyum cajenense* (Desv.) Spreng. in *Flora Mesoamericana* (Moran, 1995i: 146) and cited for Belize on the basis of an extralimital distribution record in *Flora of Chiapas* (Smith, 1981a: 33) though no supporting specimens are listed. The taxon is included here as a species of *Polytaenium* on the basis of the recent revision by Crane (1997: 516), though confirmation of the distribution from specimens is required.

*Polytaenium feei* (W. Schaffn. ex Fée) Maxon in *Sci. Surv. Porto Rico & Virgin Islands* **6**: 405 (1926)

Cayo, C.L. Lundell 6223 (MICH<sup>28</sup>, US); Stann Creek, W.A. Schipp S-70 (US); Toledo, P.H. Gentle 5020 (MO<sup>45, 115</sup>, US).

Treated as *Antrophyum lanceolatum* (L.) Kaulf. in *Flora Mesoamericana* (Moran, 1995i: 147), but included as a species of *Polytaenium* here on the basis of the recent revision by Crane (1997).

*Polytaenium lineatum* (Sw.) J. Sm. in *J. Bot. (Hooker)* **4**: 68 (1841)

Toledo, G. Davidse 36258 (MO<sup>115</sup>), B.K. Holst et al. 5402 (MO<sup>115</sup>).

This taxon was treated as a species of *Antrophyum* by Moran (1995i: 147) and not recorded from Belize, although it was listed for Chiapas and Guatemala. Stolze (1981: 442) gave the distribution as 'southern Mexico to Panama' in *Flora of Guatemala* but did not list supporting specimens, making this implicit reference difficult to interpret. It is included here on the basis of material collected in Toledo District in 1996 and identified in 1997 by A.R. Smith as *Polytaenium lanceolatum* (Sw.) Desv. The earlier name *P. lineatum* (Sw.) Sm. is used here following the revision of Vittariaceae by Crane (1997: 516).

*Radiovittaria stipitata* (Kunze) E.H. Crane in *Syst. Bot.* **22**: 515 (1997)

Toledo, B.K. Holst 4070 (MO<sup>46, 91</sup>), B.K. Holst et al. 5501 (MO<sup>115</sup>), B.K. Holst 5943 (MO<sup>115</sup>).

Listed for Belize in *Flora Mesoamericana* (Moran, 1995j: 150) as *Vittaria stipitata* Kunze, the genus *Radiovittaria* is adopted here following the revision of the Vittariaceae by Crane (1997: 515).

*Scoliosorus ensiforme* (Hook.) T. Moore, *Index fil.*: xxix (1857)<sup>45: 147</sup>

Toledo, F. Boutin & Schlosser 5116 (MO<sup>45, 115</sup>).

Treated as a species of *Antrophyum* in *Flora Mesoamericana* (Moran, 1995i: 147), but included in *Scoliosorus* here following the recent revision by Crane (1997).

*Vittaria graminifolia* Kaulf., *Enum. filic.*: 192 (1824)<sup>46: 149</sup>

Cayo, T.B. Croat 23767 (MO<sup>46, 115</sup>); Toledo, B.K. Holst 3876 (MO<sup>91, 115</sup>).

*Vittaria lineata* (L.) Sm. in *Mém. Acad. Roy. Sci. (Turin)* **5**(1790-1791): 421, t. 9, f. 5 (1793)<sup>46: 149</sup>

Cayo, C.L. Lundell 6493 (MICH<sup>28</sup>); Stann Creek, W.A. Schipp 152 (BM-000543175<sup>1</sup>, US); Toledo, J.D. Dwyer & R. Coomes 12992 (MO<sup>46, 115</sup>).

## WOODSIACEAE

*Athyrium filix-femina* (L.) Roth, *Tent. fl. Germ.* **3**: 65 (1799)<sup>64: 228</sup>

Toledo, *sine leg.* 2 (US).

While there is a doubt concerning the exact provenance of the material listed here, *A. filix-femina* is recorded from Chiapas, Guatemala and El Salvador. Moran (1995ac: 228) did not cite a specimen but referred to *Flora of Guatemala* where Stolze (1981: 96) made explicit reference to 'British Honduras' under the synonym *A. dombei* Desv., but again without supporting material.

*Diplazium cristatum* (Desr.) Alston in *J. Bot.* **74**: 173 (1936)<sup>1: 233</sup>

Toledo, P.H. Gentle 7357 (BM-000543334<sup>1, 115</sup>).

*Diplazium franconis* Liebm. in *Kongel. Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd. ser. 5, I*(1): 256 (1849)

Toledo, G. Davidse & D.L. Holland 36602 (MO<sup>115</sup>), G. Davidse 36869 (MO<sup>115</sup>, UC).

Not recorded for Belize in the published version of *Flora Mesoamericana* (Adams, 1995a: 235) though listed for Chiapas, Guatemala and Honduras. It was included in the Internet version on the basis of material collected in 1997 (*Davidse & Holland* 36869, UC) and identified by A.R. Smith.

*Diplazium grandifolium* (Sw.) Sw. in *J. Bot. (Schrad.)* **1800**(2): 62 (1801)<sup>1: 236</sup>

Toledo, W.A. Schipp S-783 (BR<sup>1, 115</sup>, NY).

*Diplazium neglectum* (H. Karst.) C. Chr., *Index filic.*: 236 (1905)<sup>1: 239</sup>

Stann Creek, W.A. Schipp 535 (BM<sup>1</sup>, BRH<sup>125</sup>).

*Diplazium plantaginifolium* (L.) Urb., *Symb. antill.* **4**: 31 (1903)<sup>1: 241</sup>

Cayo, D.R. Hunt 602 (BM); Stann Creek, P.H. Gentle 8205 (BM<sup>1, 115</sup>); Toledo, B.K. Holst et al. 5506 (MO<sup>115</sup>).

*Diplazium riedelianum* (Bong. ex Kuhn) Kuhn ex C. Chr., *Index filic.*: 230 (1905)<sup>1: 241</sup>

Toledo, B.K. *Holst* 4317 (MO<sup>1,91,115</sup>).

*Diplazium striatum* (L.) C. Presl, *Tent. pterid.*: 114 (1836)<sup>1, 243</sup>

Toledo, B.K. *Holst* 4473 (MO<sup>1,91,115</sup>).

*Diplazium urticifolium* H. Christ, *Prim. fl. Costaric.* 3(1): 29 (1901)<sup>1, 245</sup>

Adams (1995a: 245) did not list a specimen from Belize, referring instead to *Flora of Guatemala* where Stolze (1981: 197) explicitly cited 'British Honduras' but without material. There may be supporting specimens at F.

*Diplazium werckleanum* H. Christ in *Bull. Herb. Boiss. sér. 2*, 4: 969 (1904)<sup>1, 246</sup>

Toledo, F. Boutin & Schlosser 5052 (MO<sup>1,115</sup>).

*Hemidictyum marginatum* (L.) C. Presl, *Tent. pterid.*: 111, t. 3, f. 24 (1836)

Standley & Record (1936: 63) included this taxon without a specimen reference. Stolze (1981: 271) gave the general distribution as 'southern Mexico to Panama' which may be taken as an implicit record for Belize, though without supporting specimens this is difficult to interpret. It was not listed for Belize in *Flora Mesoamericana* (Moran 1995a: 246) though recorded from all surrounding countries. The only species of the genus widespread in the neotropics, *H. marginatum* is a robust plant unlikely to be misidentified as it is easily distinguished by the linear sori and venation which is anastomosed in the distal third. It is to be expected in Belize and there may be material seen by Standley at F.

## DISCUSSION

To date, at least 319 species (using currently accepted taxonomy) of pteridophytes have been recorded for Belize. Put in context, Belize has almost half of the total of 652 species listed by Stolze (1983: 1) for the much larger and topographically diverse neighbouring country of Guatemala. Compared to the United States, Belize has half as many species again, yet the United States has approximately 400 times the land area. Despite its small size and lack of the high elevations found throughout much of Central America, Belize arguably has one of the richest pteridophyte floras in the world on an area basis.

Data presented in this paper include conventional sources, particularly herbaria and published literature, but also many digital sources (Web, CD-ROM, databases) for names, specimens, literature and related information. Development of the World Wide Web version of *Flora Mesoamericana* provides an unparalleled opportunity to assess the dynamic changes to a tropical flora. Increasingly information on species distribution becomes available on the Internet long before it appears in published literature and it may be available several years earlier. In order to resolve the complex and time-consuming task of searching the Internet, a web-enabled information system has been built by the senior author. This embodies design aspects of a conventional botanical database, a management information system, a metadatabase and web browser, to locate new records semi-autonomously and track changes in known records from Internet sources on a regular basis. Using all of the available published citations, Internet sources, determinations and herbarium records, an analysis of the growth of knowledge over time of the pteridophyte flora of Belize is shown in Fig. 2.

The graph covers records built up over nearly two centuries. During the nineteenth century there were very few relevant publications, so all data are presented as a single datum point on the graph to provide a starting point. Data for the twentieth century are summarized for each decade with an error bar to indicate annual

variation within the decade. An expected shape for the graph would be a curve flattening out and approaching an asymptote as all species for the area were discovered. In contrast, a trend line shows that the rate of discovery of species is still continuing to rise steeply. The number of pteridophyte taxa recorded for Belize has risen by approximately 20% since the publication of the most recent volume of *Flora Mesoamericana*, demonstrating that the flora of this country has not been studied adequately. This percentage increase is similar to that for the flora taken as a whole, indicating that the deficiency is with collecting in general, rather than just pteridophytes.

A few of the new records listed here represent widespread, distinctive taxa and have been known for a long time from Belize, but appear in relatively obscure or overlooked literature. But most result from recent collections and it is apparent that the wetter areas of Belize, particularly towards the higher reaches of the Maya Divide in Toledo and Cayo (Fig. 1), are yielding most of the new records for the country. However, much of the Maya Divide is unexplored, particularly from the Cayo side. Some vegetation classes such as the *Liquidambar* forest of the higher elevations of the Maya Mountains and features such as the karst sinkholes in the Chiquibul Forest Reserve have had virtually no collecting. There has been a strong historical bias towards collections from southern Belize, particularly as the two most famous collectors of the Belizean flora, William A. Schipp and Percy H. Gentle, were based mainly in the south. Approximately 80% of the pteridophyte specimens examined come from the southern districts of Toledo, Stann Creek and Cayo and, of these, over half come from Toledo District. Very few pteridophytes have been collected from Corozal District. It is to be expected that a greater number of pteridophytes will be present on the more impervious shales and granite of the south than the limestone plateau of the north. The north-south gradient in rainfall undoubtedly exacerbates this effect, with almost three times as much rain falling in the far south as in the north of the country. However, it is clear that collecting in the more agriculturally developed north of the country has received far less effort and many more species are to be expected from this area, as well as from the floristically richer unexplored areas of the south.

There is also a temporal element to past collecting effort. An analysis by altitude and month reveals that very few collections have been made from upland areas during the wet season (especially June and July), presumably due to the difficult access. Collecting frequency is greatest in the dry season (mainly February to April), when many pteridophytes are sterile. Many species of pteridophytes widespread in Central America are currently missing from the list for Belize. While the country does not have the high elevations of most of its neighbours, it is evident that this list of native ferns and fern allies is far from complete and the total will increase substantially with focussed collecting.

Other taxa tentatively recorded for Belize in the literature and collections, but with insufficient information at present include: *Adiantum andicola* Liebm., *A. urophyllum* Hook., *Anemia phyllitidis* (L.) Sw., *Asplenium munchii* A.R. Sm., *A. radicans* L., *Diplazium lonchophyllum* Kunze, *Elaphoglossum setigerum* (Sodirol) Diels, *E. vestitum* (Schltdl. & Cham.) T. Moore, *Lomariopsis fendleri* D.C. Eaton, *L. sorbifolia* (L.) Fée, *Loxogramme mexicana* (Fée) C. Chr., *Polypodium murorum* Hook., *Tectaria trifoliata* (L.) Cav., *Thelypteris interrupta* (Willd.) K. Iwats., *T. parasitica* (L.) Tardieu, *T. scalaris* (H. Christ) Alston, and *T. serrata* (Cav.) Alston.

This paper is the first in a series arising from research on Belizean floristics, and updates will appear on The Natural History Museum web site (<http://www.nhm.ac.uk/>) as specimens, publications and citations are added. For the first time, the Belizean collections held at The Natural History Museum are being located in the herbaria and



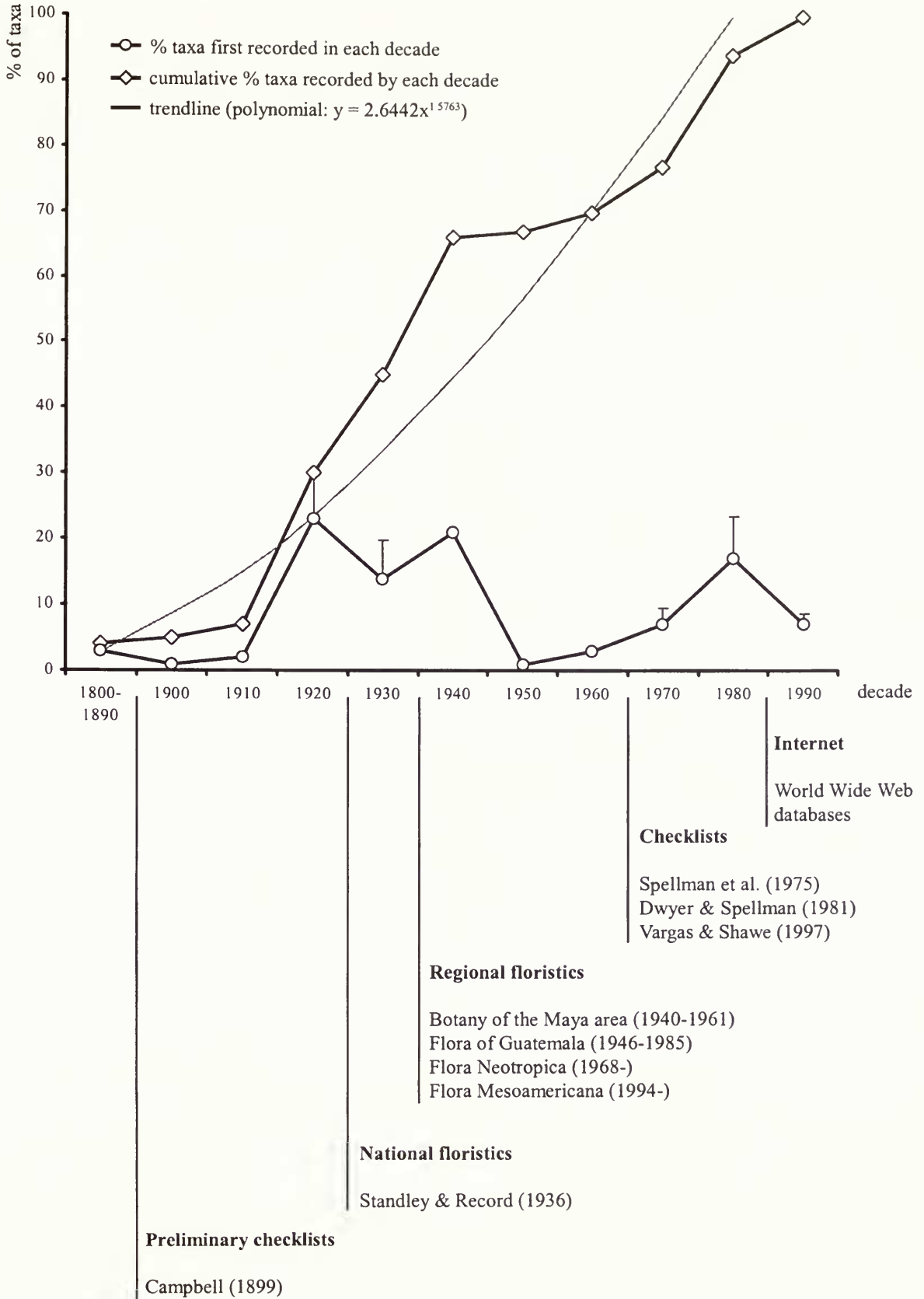


Fig. 2 Growth of knowledge of the pteridophyte flora of Belize.

documented. The project currently seeks to collate basic information for vascular plant taxa from Belize, supported by relevant specimens and literature, and some 8000 names, 7000 references and 32 000 specimens are in the database at the time of submission of the paper. It is estimated that minimal information on at least 45 000 specimens from Belize is comparatively readily available in the public domain, and that 75–100 000 specimens have been collected from the country. This material forms the basis for the cumulative knowledge on the flora of Belize, and provides a basis for further research.

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